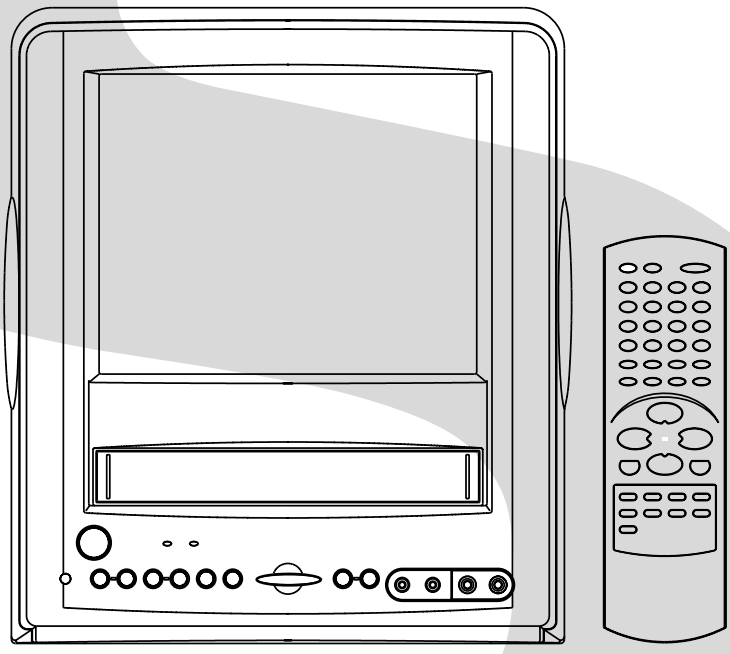
TOSHIBA

FILE NO. 140-200203

SERVICE MANUAL

COLOR TELEVISION/ VIDEO CASSETTE RECORDER

MV9DM2



SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

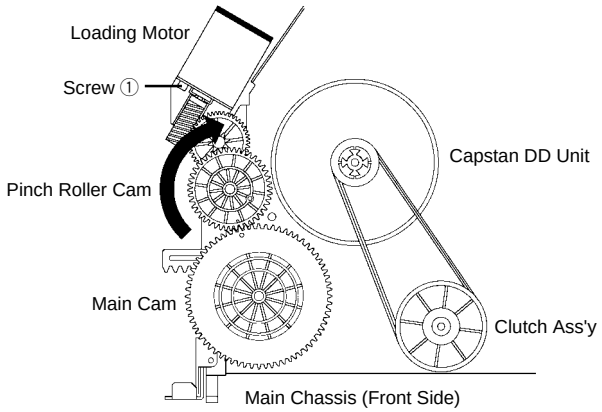
HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the VCR block from the main unit.
   (Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)
2. Remove the screw ① of the Deck Chassis and remove the Loading Motor.
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.
4. Rotate the Clutch Ass'y either of the derections to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.



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GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size		9 inch / 222.8mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G / 0.18G
		Color System			NTSC
		Speaker			1Speaker
			Position		Side
			Size		3 Inch
			Impedance		8 ohm
		Sound Output	MAX		1.2 W
			10%(Typical)		0.8 W
G-2	**VCR System**	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			No
		NTSC PB			-
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		2 Head
			FM Audio Head		No
			Audio /Control		Mono
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec PAL		-
			Rec NTSC		SP/SLP
			Play PAL		-
			Play NTSC		SP/SLP
		Fast Forward / Rewind Time (Approx.)			FF:4'50"/REW:2'30" at T-120
		Forward/Reverse Picture Search	NTSC or PAL-M		SP/SLP=3x,5x/9x,15x
		Frame Advance	Slow		-
		Slow Speed	Variable Slow		-
G-3	**Tuning System**	Broadcasting System			US Sysytem M
		Tuner and Receive CH	System		1Tuner
			Destination		USA/CANADA+CATV
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 ohm
			CH Coverage		2~69, 4A,A-5~A-1, A~I, J~W,W+1~W+84
		Intermediate Frequency	Picture(FP)		45.75MHz
			Sound(FS)		41.25MHz
			FP-FS		4.5MHz
		Preset CH			No
		Stereo/Dual TV Sound			No
G-4	**Signal**	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		50 dB
			Horizontal Resolution at SP Mode		230Lines
		Audio Signal	Input Level		-8dBm/50Kohm
			Output Level		-8dBm/ 1Kohm
			S/N Ratio at SP		38 dB
			Harmonic Distortion at SP (1KHz)	Typical	1.5 %
			Frequency Response	at SP	100Hz ~10kHz
				at LP	-
				at SLP	100Hz ~4kHz
		Hi-Fi Audio Signal	Dynamic Range : More than		-
			Wow And Flutter : Less than		-
			Channel Separation : More than		-
			Harmonic Distortion : Less than		-
G-5	**Power**	Power Source	AC		120V 60Hz
			DC		12V
		Power Consumption		at AC	48 W at 120V 60Hz
				at DC	48 W at 12 V
			Stand by (at AC)		3 W at 120V 60 Hz
			Per Year		-
		Protector	Power Fuse		Yes
			Dew Sensor		Yes
G-6	**Regulation**		Safety		UL
			Radiation		FCC
			X-Radiation		DHHS
G-7	**Temperature**		Operation		+5oC ~ +40oC
			Storage		-20oC ~ +60oC
G-8	**Operating Humidity**				Less then 80% RH

GENERAL SPECIFICATIONS

G-9	**On Screen Display**	Menu			Yes	
			Menu Type		Character	
			Timer Rec Set		Yes	
			Channel Setup		Yes	
				TV/CATV	Yes	
				Auto ch Memory	Yes	
				Add/Delete	Yes	
				Guide ch Set		No
			TV Setup		Yes	
				V-chip Set	Yes	
				On/Off Timer Set	Yes	
				Picture	Yes	
				Audio		No
				Sap On/Off		No
			Auto Repeat On/Off		Yes	
			On/Off Timer Set			No
			System Setup		Yes	
				Clock Set	Yes (Calendar 12H)	
				Language	Yes	
				Auto Clock On/Off	Yes	
				Standard Time	Yes	
				Daylight Saving Time	Yes	
			Commercial Advance			No
				Marking On/Off		No
				Blueback On/Off		No
				Playback Auto/Manual		No
				Unmarked Tape		No
			Movie Advance			No
				Go To Movie		No
				Go To Preview		No
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry				No
		Clock			Yes	
		CH/AV			Yes	
		Tape Counter(Linear Counter)			Yes	
		Tape Speed			Yes	
		Sleep Time			Yes	
		Stereo/Audio Output				No
				Bilingal		No
				SAP		No
		Control Level	Volume		Yes	
			Bright / Contrast / Sharpness/Color		Yes	
			Tint		Yes	
			Bass/Treble/Balance			No
			Manual Tracking		Yes	
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes	
		Auto Tracking/Manual Tracking			Yes	
		Caption / Text			Yes	
		Index				No
		Muting			Yes	
		Hi-Fi				No
		Repeat			Yes	
		Zero Return				No
		DEW			Yes	
G-10	**OSD Language**				English French Spanish	
G-11	**Clock,Timer and Timer Back-up**	Calendar			1990/1/1 ~ 2081/12/31	
		Timer Events			8 prog/ 1 month	
		One Touch Recording Max Time			5 Hours	
		OTPB Valid Time			No	
		Sleep Timer		Max Time	120	min.
				Step	10	min.
		On/Off Timer		Program(On Tim / Off Tim)	1	prog.
		Auto Shut Off		No Signal	15	min.
				No Operation	-	
		Timer Back-up (at Power Off Mode)			5	sec.

GENERAL SPECIFICATIONS

G-12	**Remote Control**	Unit		RC-DQ
		Glow in Dark Remocon		Yes
		Format		NEC
		Custom Code		40-BF/44-BB h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		42 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			Input Select	Yes
			Play	Yes
			F.Fwd	Yes
			Rew	Yes
			Pause/Still	Yes
			Stop	Yes
			Rec/OTR	Yes (2Key)
			Eject	Yes
			Counter Reset	Yes
			Speed	Yes
			Timer Rec	Yes(2Key)
			TV Monitor	No
			Quick View	Yes
			Program	Yes
			Slow	No
			Auto Tracking	Yes
			Set/Tracking+	Yes
			Set/ Tracking -	Yes
			Menu	Yes
			Enter	Yes
			Cancel	Yes
			Call	Yes
			TV/Caption/Text	Yes
			Sleep Timer	Yes
			Muting	Yes
			Zero Return	Yes
			CM Skip	Yes
			Audio Select	No
G-13	**Features**	Auto Head Cleaning		No
		Auto Tracking		Yes
		HQ (VHS Standard High Quality)		Yes
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes
		VIDEO PLUS+(SHOWVIEW,G-CODE)		No
		Auto Clock		Yes
		Forward / Reverse Picture Search		Yes
		One Touch Playback		No
		Auto CH Memory		Yes
		Closed Caption		Yes
		TV Auto Shut off Function		Yes
		End Call		No
		Index Search		No
		SQPB		No
		CATV		Yes
		CM Skip(30sec x 6 Times)		Yes
		Comb Filter		No
		TV Monitor		No
		Program Extend		No
		Choke Coil		No
		Energy Star		Yes
		Dirty Head		No
		V-chip	USA V-chip	Yes
			CANADA V-chip	No
		CM Advance		No
		Movie Advance		No
		Reset Start Auto Play		No
		Power On Memory		No

GENERAL SPECIFICATIONS

G-14	**Accessories**	Owner's Manual		Language	English	
				w/Guarantee Card	Yes	
		Remote Control Unit			Yes	
		Rod Antenna			Yes	
				Poles	2pole	
				Terminal	F type	
				w/300 ohm to 75 ohm Antenna Adapter	Yes	
		Loop Antenna				No
				Terminal	-	
		U/V Mixer				No
		DC Car Cord (Center+)			Yes	
		Guarantee Card				No
		Warning Sheet				No
		Circuit Diagram				No
		Antenna Change Plug				No
		Service Facility List				No
		Columbia Offer Sheet				No
		Tent Card				No
		Important Safeguard				No
		Dew/AHC Caution Sheet				No
		AC Plug Adapter				No
		Quick Set-up Sheet				No
		Battery			Yes	
				UM size x pcs	UM4 x 2 pcs	
		AC Cord				No
		AV Cord (2Pin-1Pin)				No
		Registration Card			Yes	
		ESP Card			Yes	
		300 ohm to 75 ohm Antenna Adapter				No
G-15	**Interface**	Switch		Power	Yes	
				Play	Yes	
				Pause/Still		No
				System Select		No
				One Touch Playback		No
				Channel Up	Yes	
				Channel Down	Yes	
				F.FWD/Cue	Yes	
				Eject/Stop	Yes	
				Main Power SW		No
				Volume Up	Yes	
				Volume Down	Yes	
				Rew/Rev	Yes	
				Rec/OTR	Yes	
				Input Select		No
		Indicator		Power		No
				Rec/OTR	Red	
				T-Rec	Red	
				On Timer		No
				CS		No
		Key Light up		Rec/OTR		No
				One Touch Playback		No
				Play		No
		Terminals	Front	Video Input	RCAx1	
				Audio Input	RCAx1	
				Other Terminal	Head Phone(Stereo & Mono, 3.5mm) x 2	
			Rear	Video Input	RCAx1	
				Audio Input	RCAx1	
				Video Output	RCAx1	
				Audio Output	RCAx1	
				Euro Scart		No
				Diversity		No
				Ext Speaker		No
				DC Jack 12V(Center +)	Yes	
				VHF/UHF Antenna Input	F Type	
				AC Inlet		No
G-16	**Set Size**			Approx. W x D x H (mm)	278 x 306.5 x 311.5	
G-17	**Weight**			Net (Approx.)	8.8 kg	(19.4 lbs)
				Gross (Approx.)	10.5 kg	(23.1 lbs)

GENERAL SPECIFICATIONS

G-18	**Carton**	Master Carton		No
			Content	-
			Material	-
			Dimensions W x D x H(mm)	-
			Description of Origin	-
		Gift Box		Yes
			Material	Double/White CORRUGATED
			Dimensions W x D x H(mm)	338 x 376 x 386
			Design	As per Buyer's
			Description of Origin	Yes
		Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	62
		Container Stuffing(40' container)		1260 Sets
G-19	**Cabinet Material**		Cabinet Front	PS 94V0 DECABROM
			Cabinet Rear	PS 94V0 DECABROM
			Jack Panel	PS 94V0 DECABROM

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 4 screws ①.
2. Remove the screw ②.
3. Remove the 2 screws ③.
4. Remove the 2 screws ④ which are used for holding the Back Cabinet.
5. Remove the AC cord from the AC cord hook ⑤.
6. Remove the Back Cabinet in the direction of arrow.

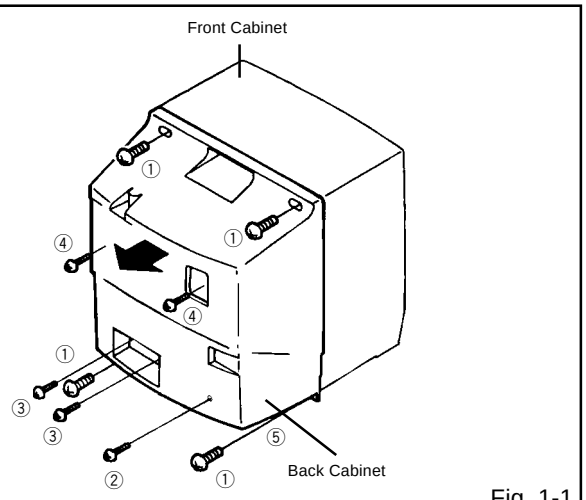


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors:
   (CP801 and CP850).
3. Remove the CRT PCB in the direction of arrow.

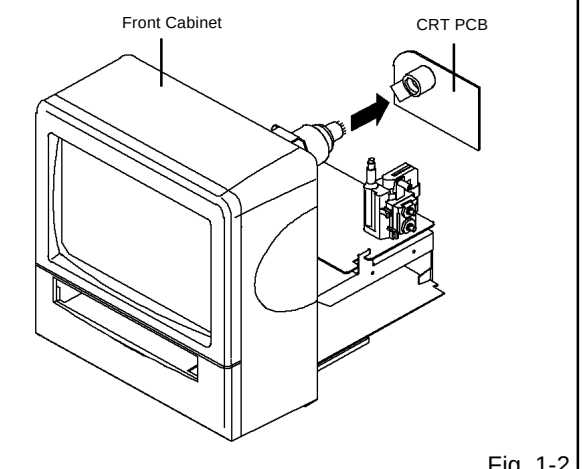


Fig. 1-2

1-3: TV/VCR BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors:
   (CP353, CP401 and CP403).
3. Unlock the support ②.
4. Remove the TV/VCR Block in the direction of arrow.

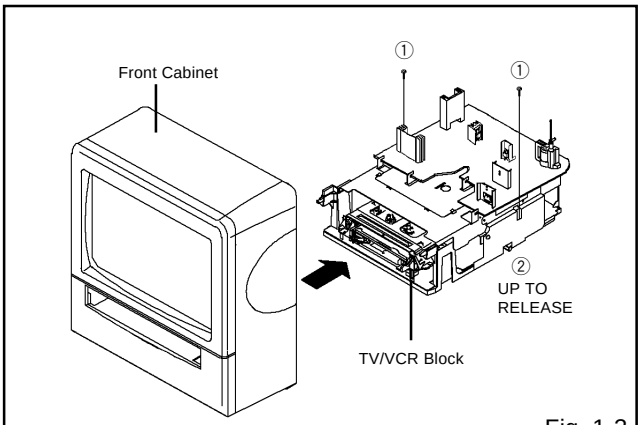


Fig. 1-3

1-4: MAIN PCB (Refer to Fig. 1-4)

1. Remove the screw ①.
2. Remove the Main PCB Holder.
3. Remove the 2 screws ②.
4. Remove the screw ③.
5. Remove the 2 screws ④.
6. Disconnect the following connectors:
   (CP502 and CP820).
7. Remove the Main PCB in the direction of arrow.

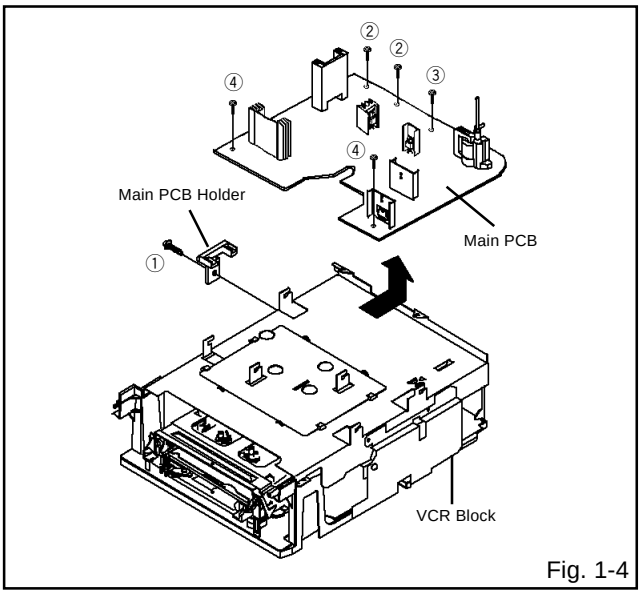


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Remove the screw ②.
3. Remove the Deck Shield Plate in the direction of arrow.

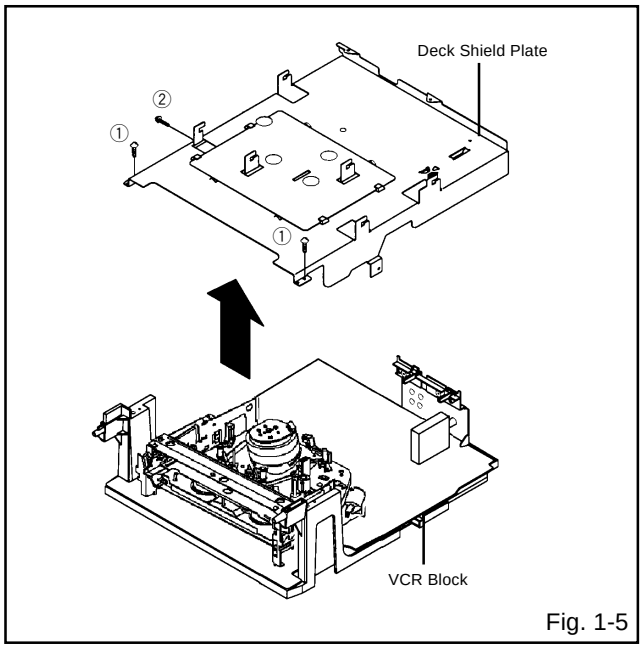


Fig. 1-5

1-6: DECK CHASSIS (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Disconnect the following connectors:
   (CP1001, CP1002, CP4001, CP4002 and CP4003).
3. Remove the Deck Chassis and Shield Cover Deck in the direction of arrow.

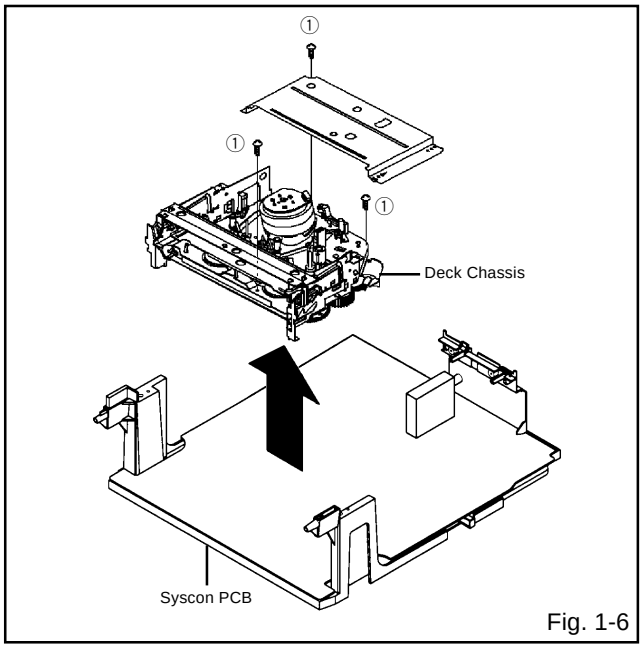


Fig. 1-6

1-7: JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Unlock the 2 supports ③.
5. Remove the Jack Plate in the direction of arrow (B).

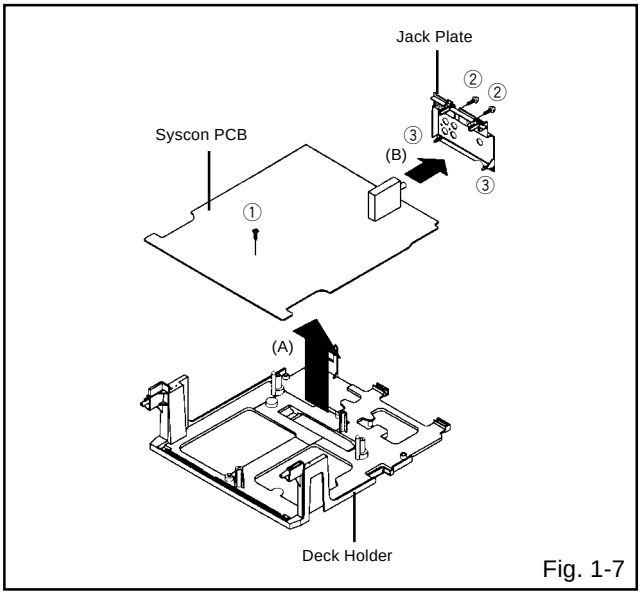


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

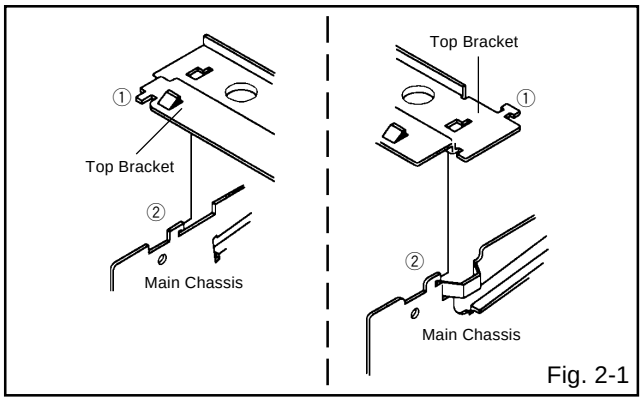


Fig. 2-1

2-2: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

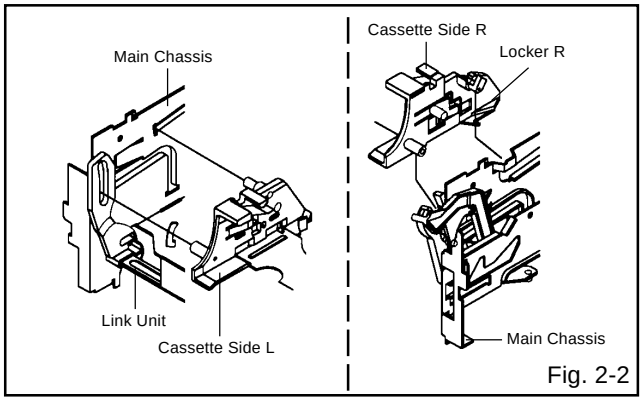


Fig. 2-2

2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

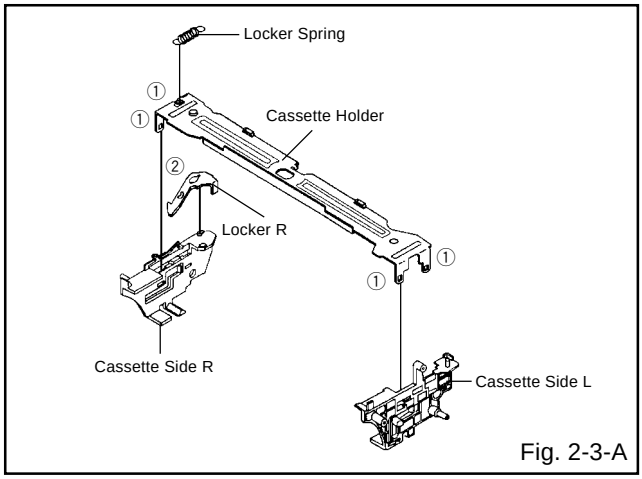


Fig. 2-3-A

NOTE

1. In case of the Locker R installation, check if the two positions of Fig.2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

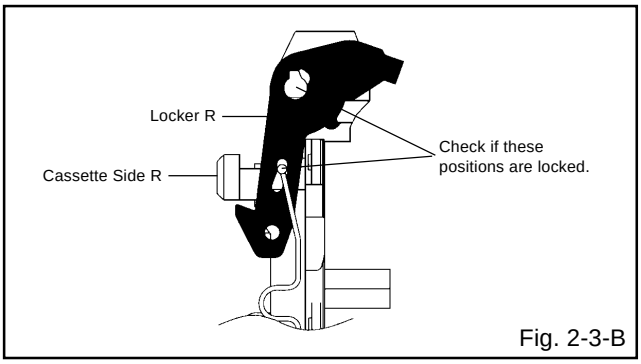


Fig. 2-3-B

2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

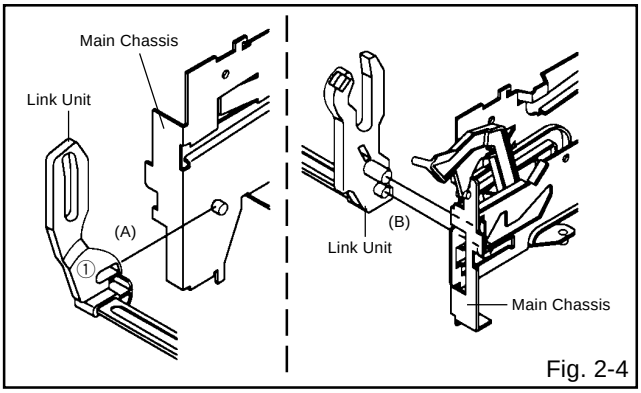


Fig. 2-4

2-5: LINK LEVER/FLAP LEVER (Refer to Fig. 2-5)

1. Extend the support ①.
2. Remove the Link Lever.
3. Remove the Flap Lever.

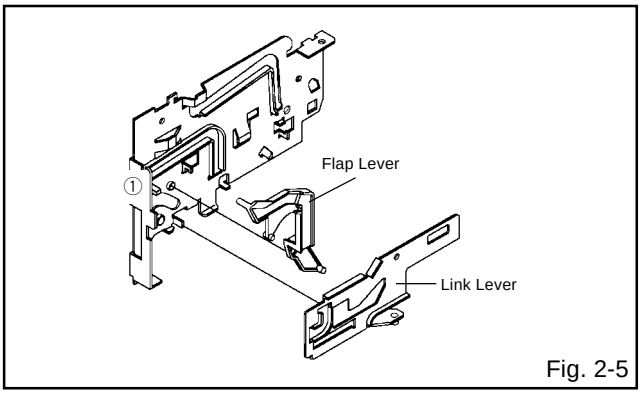
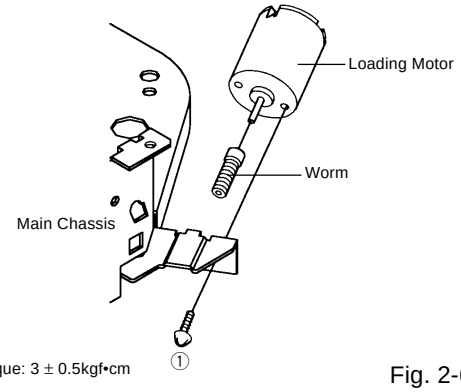


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.



• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-6-A

NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.

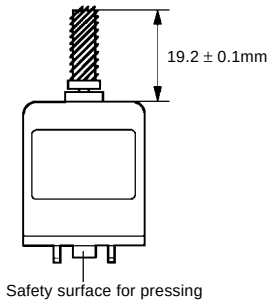


Fig. 2-6-B

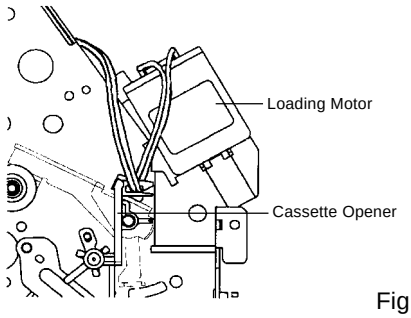


Fig. 2-6-C

2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

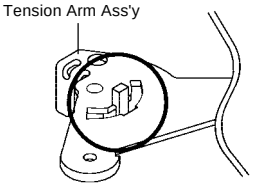


Fig. 2-7-A

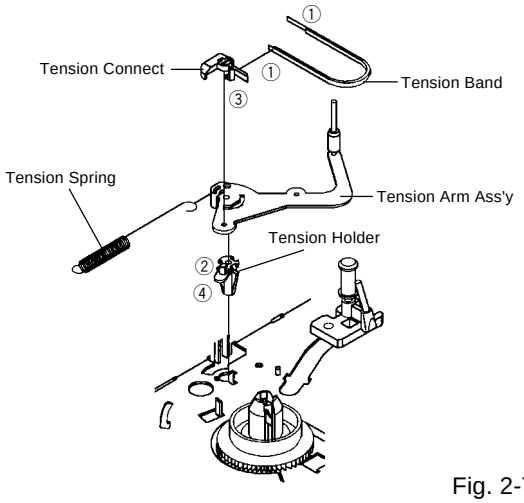


Fig. 2-7-B

NOTE

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-7-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.

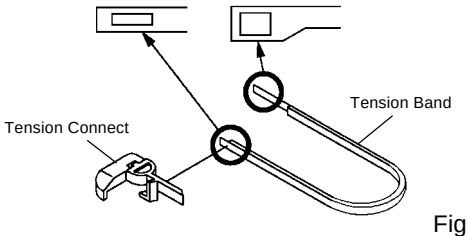


Fig. 2-7-C

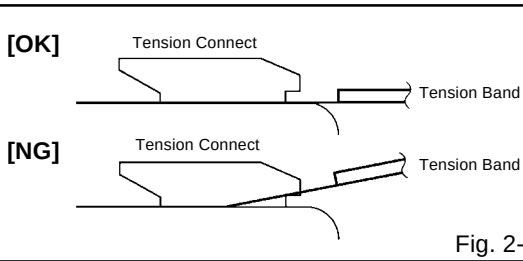


Fig. 2-7-D

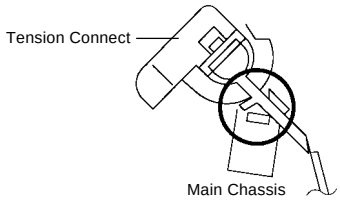


Fig. 2-7-E

DISASSEMBLY INSTRUCTIONS

2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

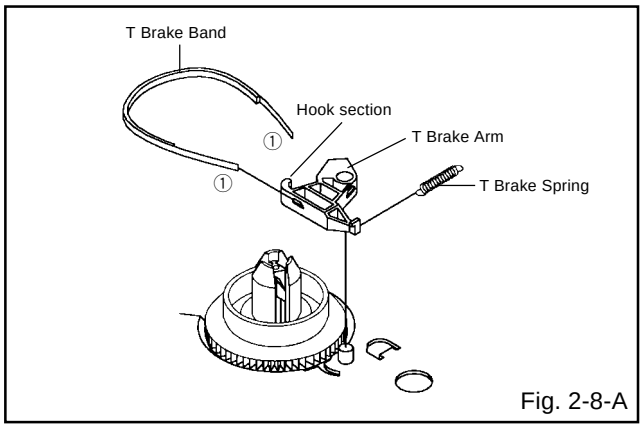


Fig. 2-8-A

NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

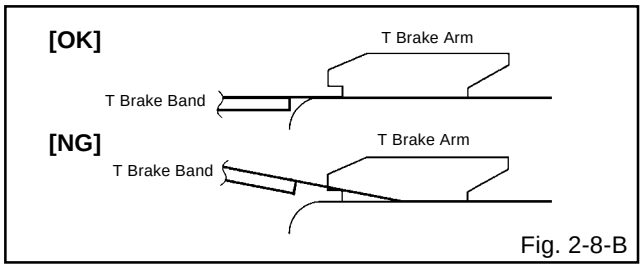


Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Ass'y and Idler Gear.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-9-A)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it. (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

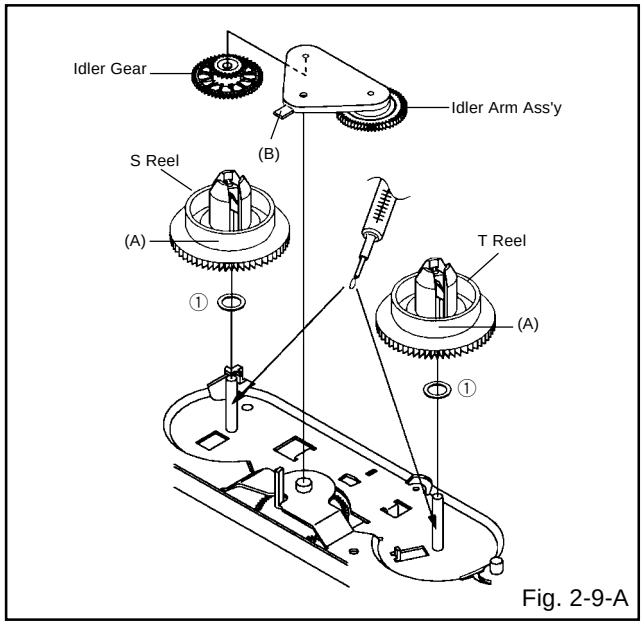


Fig. 2-9-A

NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-9-B)**
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

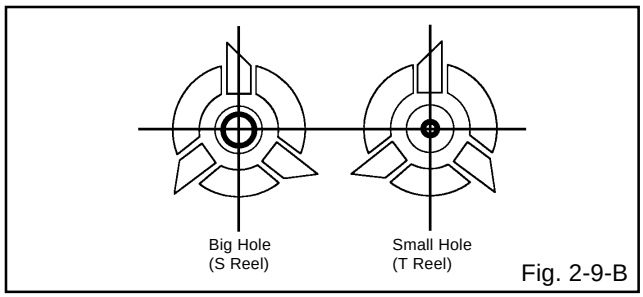


Fig. 2-9-B

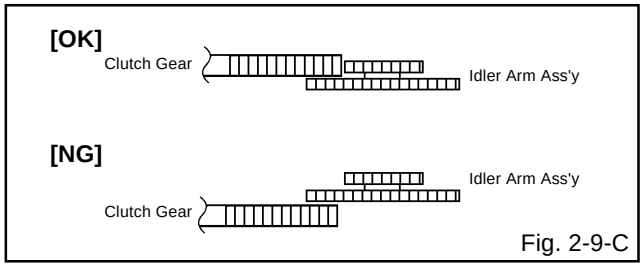


Fig. 2-9-C

DISASSEMBLY INSTRUCTIONS

2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.

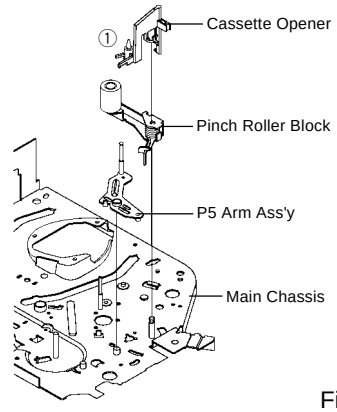


Fig. 2-10-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

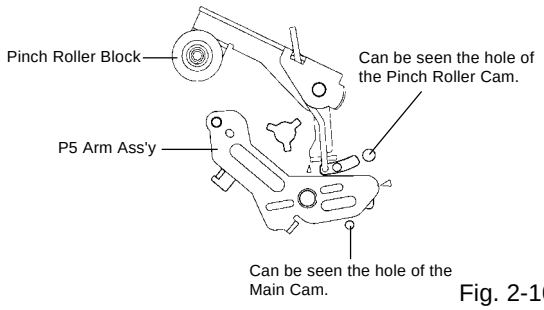


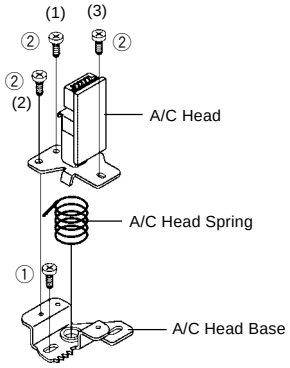
Fig. 2-10-B

2-11: A/C HEAD (Refer to Fig. 2-11-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).



• Screw Torque: 5 ± 0.5kgf•cm (Screw ①)

Fig. 2-11-A

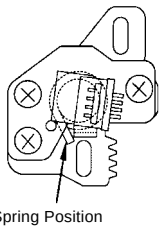
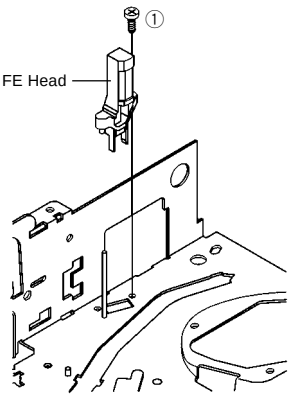


Fig. 2-11-B

2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

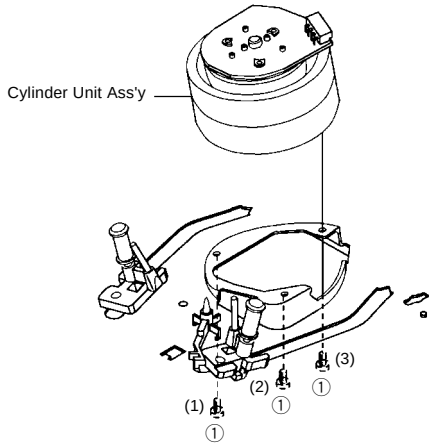
Fig. 2-12

2-13: CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Disconnect the following connector: (CD2001)
2. Remove the 3 screws ①.
3. Remove the Cylinder Unit Ass'y.

NOTE

1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-13

DISASSEMBLY INSTRUCTIONS

2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

1. Remove the Capstan Belt.
2. Remove the 3 screws ①.
3. Remove the Capstan DD Unit.

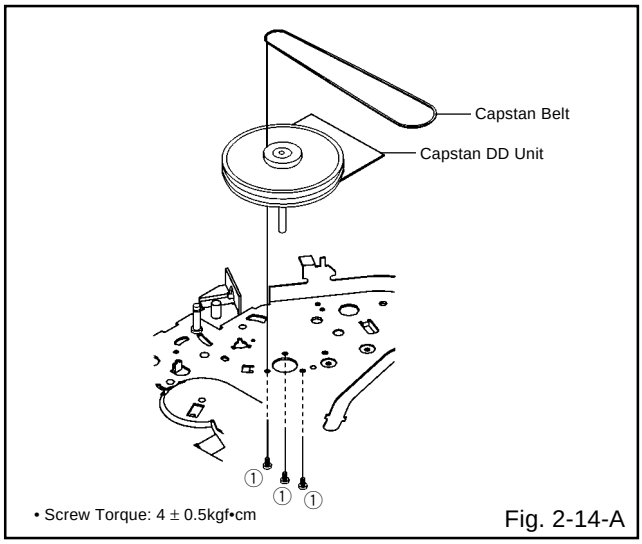


Fig. 2-14-A

NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.) **(Refer to Fig. 2-14-B, C)**

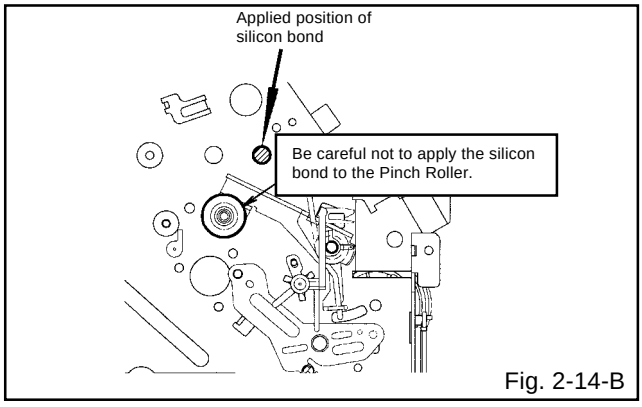


Fig. 2-14-B

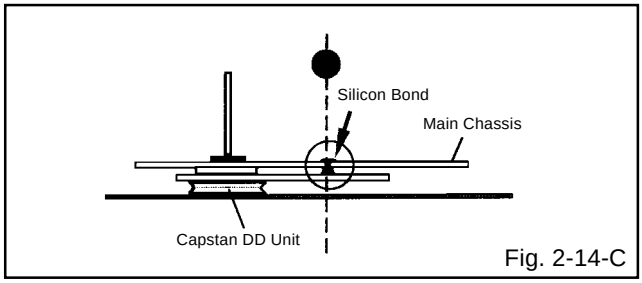


Fig. 2-14-C

2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

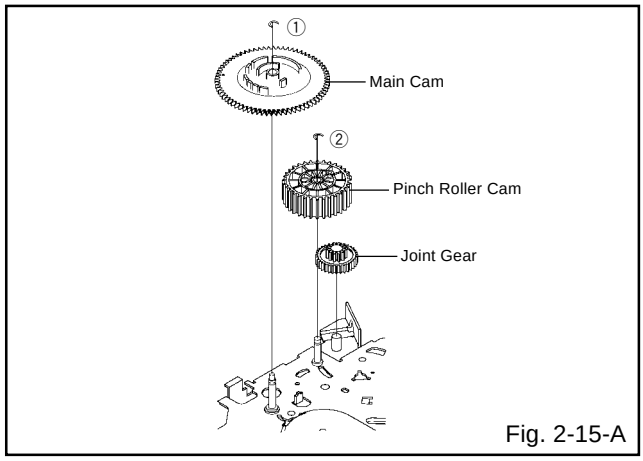


Fig. 2-15-A

NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. **(Refer to Fig. 2-15-B)**

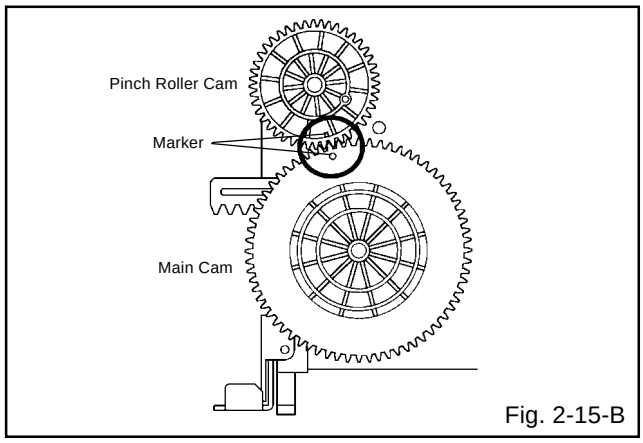


Fig. 2-15-B

2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

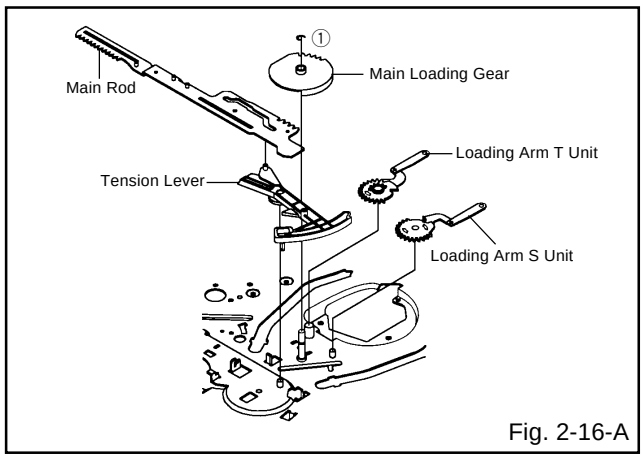


Fig. 2-16-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-16-B)**

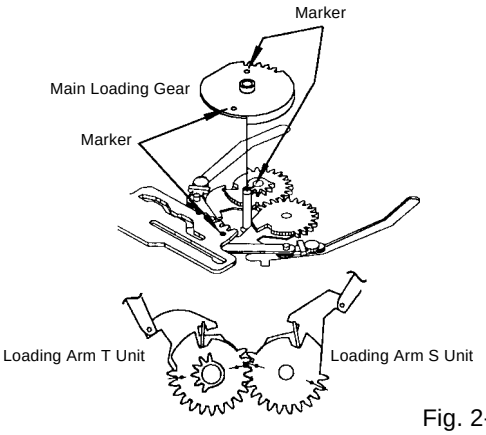


Fig. 2-16-B

2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/ CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

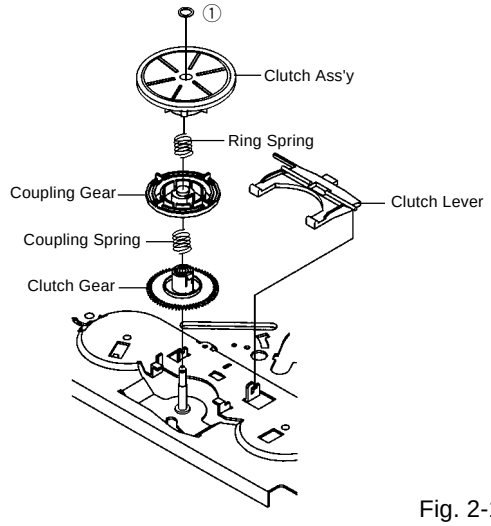


Fig. 2-17-A

NOTE

1. In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. **(Refer to Fig. 2-17-B)**

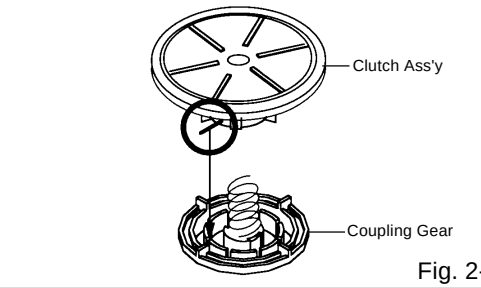


Fig. 2-17-B

2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S Unit and Inclined Base T Unit.

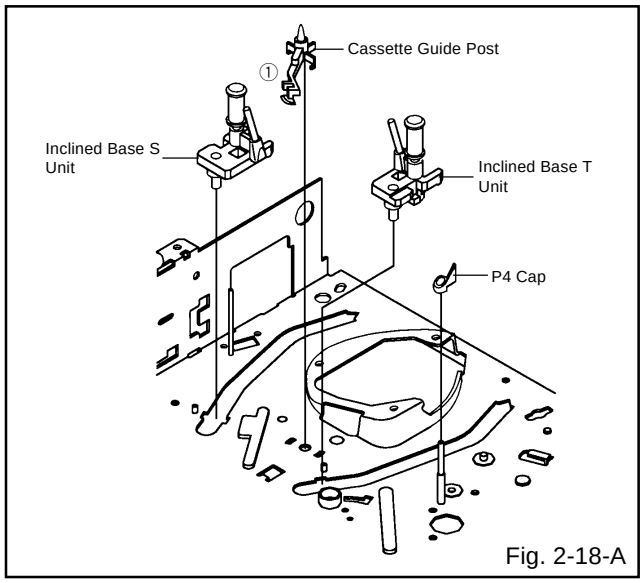


Fig. 2-18-A

NOTE

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.

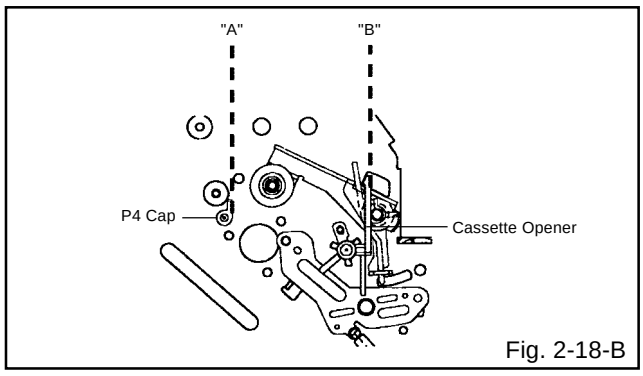


Fig. 2-18-B

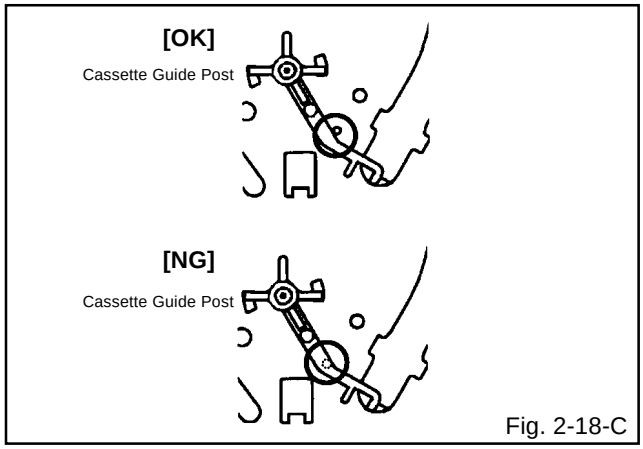


Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

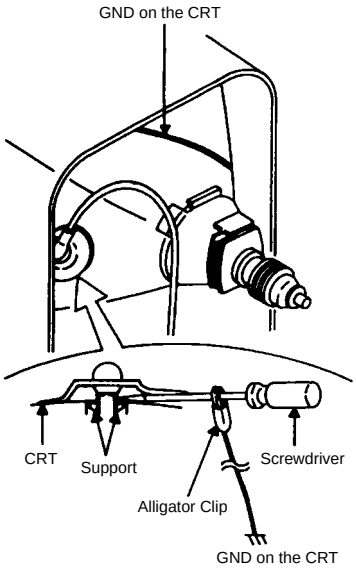


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

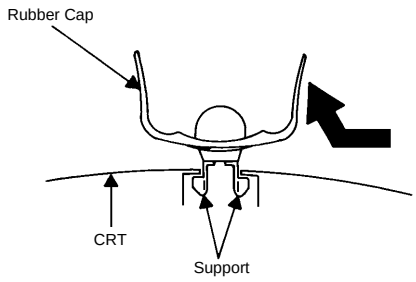


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

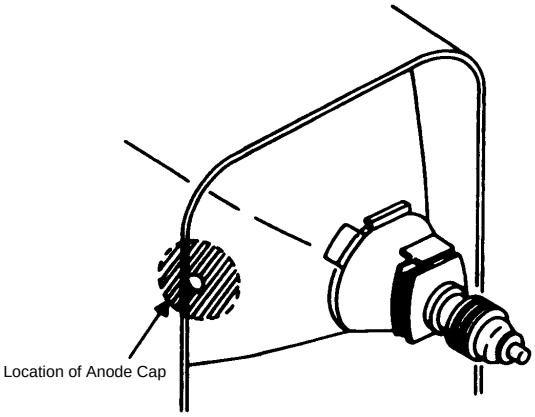


Fig. 3-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

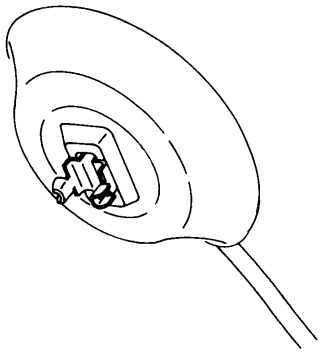


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5**.

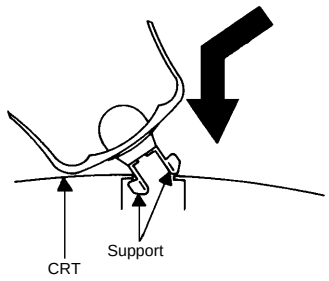


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

4. REMOVAL OF DEFLECTION YOKE

(Refer to Fig. 4-1)

1. Loosen the screw ①.
2. Remove the Convergence • Purity Magnet in the direction of arrow.
3. Remove the 3 Wedges.
4. Remove the Deflection Yoke in the direction of arrow.

INSTALLATION

Install new Deflection Yoke in reverse steps of REMOVAL.

NOTE

After adjusting the purity and the convergence, fix the screw ① and lock the wedges.

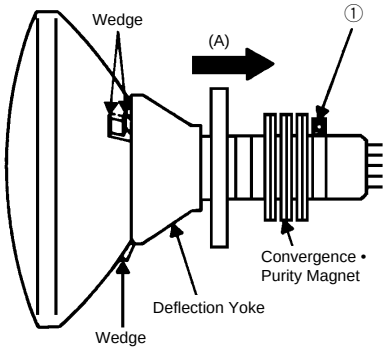


Fig. 4-1

DISASSEMBLY INSTRUCTIONS

5. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 5-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

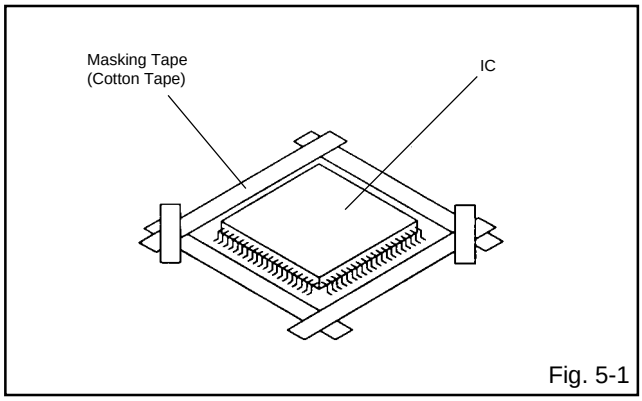


Fig. 5-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 5-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

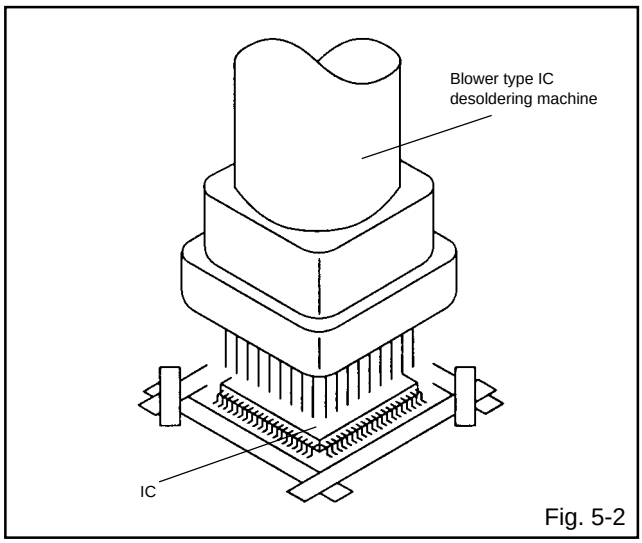


Fig. 5-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 5-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

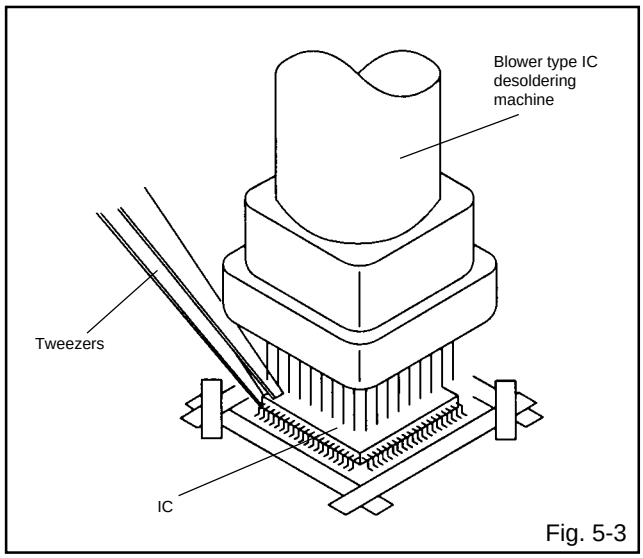


Fig. 5-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 5-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

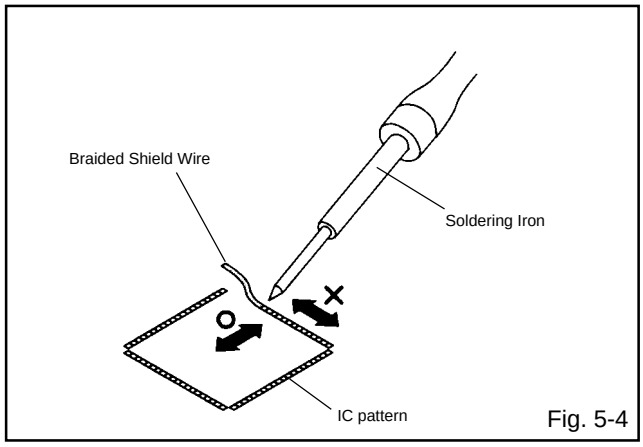


Fig. 5-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 5-5.)**

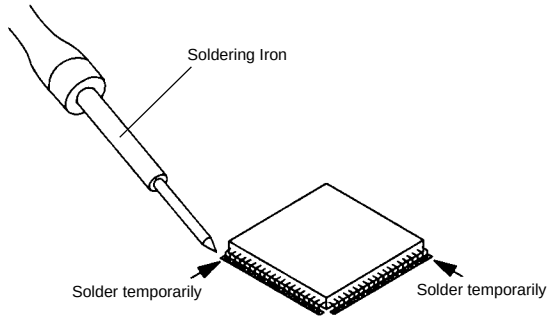


Fig. 5-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 5-6.)**

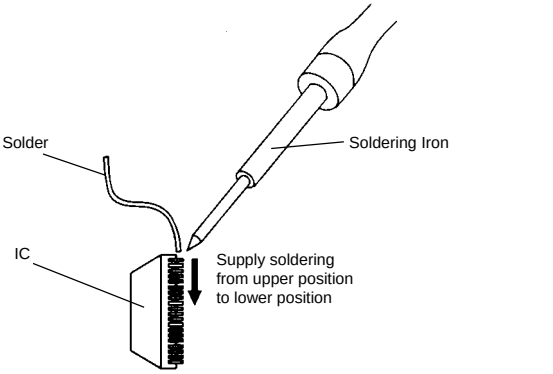


Fig. 5-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 5-7.)**

   NOTE

   Do not absorb the solder to excess.

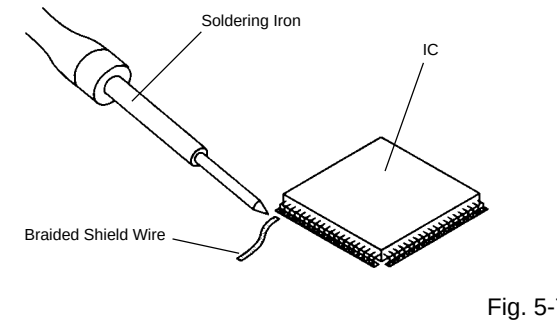


Fig. 5-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 5-8.)**

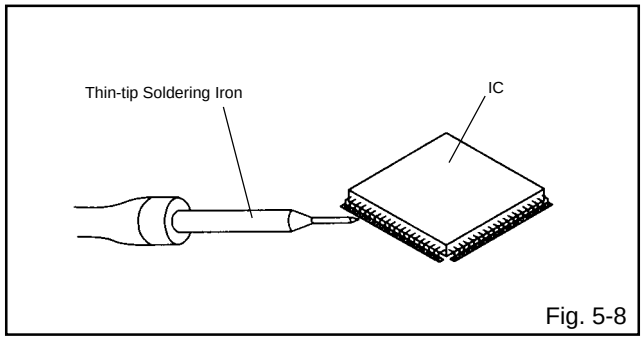


Fig. 5-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	**A/C**	:	Audio/Control
	ACC	:	Automatic Color Control
	AE	:	Audio Erase
	AFC	:	Automatic Frequency Control
	AFT	:	Automatic Fine Tuning
	AFT DET	:	Automatic Fine Tuning Detect
	AGC	:	Automatic Gain Control
	AMP	:	Amplifier
	ANT	:	Antenna
	A.PB	:	Audio Playback
	APC	:	Automatic Phase Control
	ASS'Y	:	Assembly
	AT	:	All Time
	AUTO	:	Automatic
	A/V	:	Audio/Video
B	**BGP**	:	Burst Gate Pulse
	BOT	:	Beginning of Tape
	BPF	:	Bandpass Filter
	BRAKE SOL	:	Brake Solenoid
	BUFF	:	Buffer
	B/W	:	Black and White
C	**C**	:	Capacitance, Collector
	CASE	:	Cassette
	CAP	:	Capstan
	CARR	:	Carrier
	CH	:	Channel
	CLK	:	Clock
	CLOCK (SY-SE)	:	Clock (Syscon to Servo)
	COMB	:	Combination, Comb Filter
	CONV	:	Converter
	CPM	:	Capstan Motor
	CTL	:	Control
	CYL	:	Cylinder
	CYL-M	:	Cylinder-Motor
	CYL SENS	:	Cylinder-Sensor
D	**DATA (SY-CE)**	:	Data (Syscon to Servo)
	dB	:	Decibel
	DC	:	Direct Current
	DD Unit	:	Direct Drive Motor Unit
	DEMOD	:	Demodulator
	DET	:	Detector
	DEV	:	Deviation
E	**E**	:	Emitter
	EF	:	Emitter Follower
	EMPH	:	Emphasis
	ENC	:	Encoder
	ENV	:	Envelope
	EOT	:	End of Tape
	EQ	:	Equalizer
	EXT	:	External
F	**F**	:	Fuse
	FBC	:	Feed Back Clamp
	FE	:	Full Erase
	FF	:	Fast Forward, Flip-flop
	FG	:	Frequency Generator
	FL SW	:	Front Loading Switch
	FM	:	Frequency Modulation
	FSC	:	Frequency Sub Carrier
	FWD	:	Forward
G	**GEN**	:	Generator
	GND	:	Ground
H	**H.P.F**	:	High Pass Filter
	H.SW	:	Head Switch
	Hz	:	Hertz
I	**IC**	:	Integrated Circuit
	IF	:	Intermediate Frequency
	IND	:	Indicator
	INV	:	Inverter
K	**KIL**	:	Killer
L	**L**	:	Left
	LED	:	Light Emitting Diode
	LIMIT AMP	:	Limiter Amplifier
	LM, LDM	:	Loading Motor
	LP	:	Long Play
	L.P.F	:	Low Pass Filter
	LUMI.	:	Luminance
M	**M**	:	Motor
	MAX	:	Maximum
	MINI	:	Minimum
	MIX	:	Mixer, mixing
	MM	:	Monostable Multivibrator
	MOD	:	Modulator, Modulation
	MPX	:	Multiplexer, Multiplex
	MS SW	:	Mecha State Switch
N	**NC**	:	Non Connection
	NR	:	Noise Reduction
O	**OSC**	:	Oscillator
	OPE	:	Operation
P	**PB**	:	Playback
	PB CTL	:	Playback Control
	PB-C	:	Playback-Chrominance
	PB-Y	:	Playback-Luminance
	PCB	:	Printed Circuit Board
	P. CON	:	Power Control
	PD	:	Phase Detector
	PG	:	Pulse Generator
	P-P	:	Peak-to Peak
R	**R**	:	Right
	REC	:	Recording
	REC-C	:	Recording-Chrominance
	REC-Y	:	Recording-Luminance
	REEL BRK	:	Reel Brake
	REEL S	:	Reel Sensor
	REF	:	Reference
	REG	:	Regulated, Regulator
	REW	:	Rewind
	REV, RVS	:	Reverse
	RF	:	Radio Frequency
	RMC	:	Remote Control
	RY	:	Relay
S	**S. CLK**	:	Serial Clock
	S. COM	:	Sensor Common
	S. DATA	:	Serial Data
	SEG	:	Segment
	SEL	:	Select, Selector
	SENS	:	Sensor
	SER	:	Search Mode
	SI	:	Serial Input
	SIF	:	Sound Intermediate Frequency
	SO	:	Serial Output
	SOL	:	Solenoid
	SP	:	Standard Play
	STB	:	Serial Strobe
	SW	:	Switch

KEY TO ABBREVIATIONS

S	**SYNC**	:	Synchronization
	SYNC SEP	:	Sync Separator, Separation
T	**TR**	:	Transistor
	TRAC	:	Tracking
	TRICK PB	:	Trick Playback
	TP	:	Test Point
U	**UNREG**	:	Unregulated
V	**V**	:	Volt
	VCO	:	Voltage Controlled Oscillator
	VIF	:	Video Intermediate Frequency
	VP	:	Vertical Pulse, Voltage Display
	V.PB	:	Video Playback
	VR	:	Variable Resistor
	V.REC	:	Video Recording
	VSF	:	Visual Search Fast Forward
	VSR	:	Visual Search Rewind
	VSS	:	Voltage Super Source
	V-SYNC	:	Vertical-Synchronization
	VT	:	Voltage Tuning
X	**X'TAL**	:	Crystal
Y	**Y/C**	:	Luminance/Chrominance

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter SERVICE MODE, unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key simultaneously.

The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more than 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF USING HOURS). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF MEMORY IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape. Refer to the "PREPARATION FOR SERVICING"

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

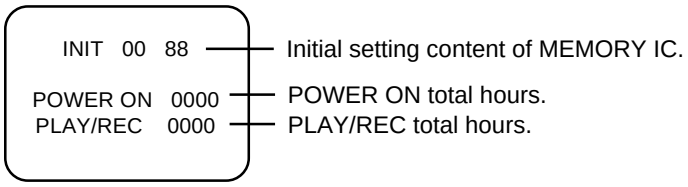
■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

POWER ON total hours and PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".
The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and the Channel button **(6)** on the remote control simultaneously.
3. After the confirmation of using hours, turn off the power.



(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)

PREVENTIVE CHECKS AND SERVICE INTERVALS

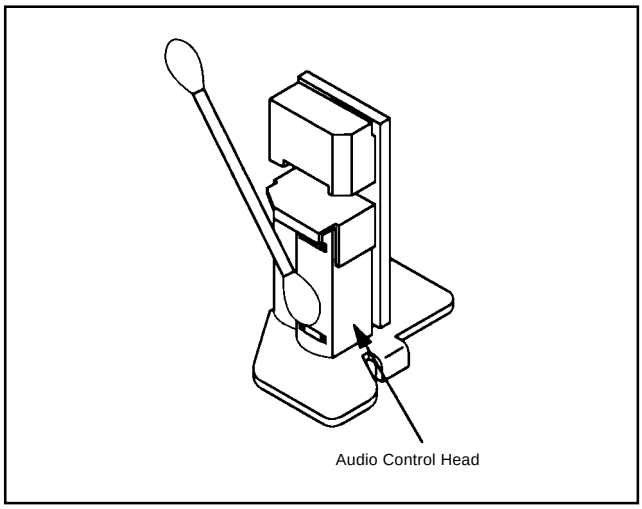
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

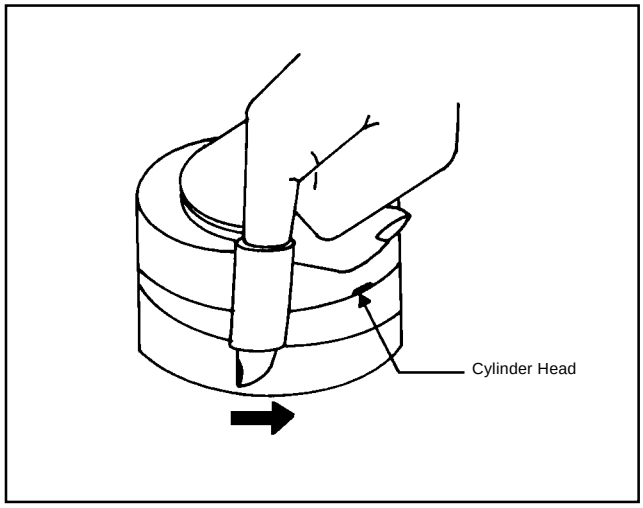
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	88	0A	E2	63	43	14	34	0B	51	3A	10	66	00	40	00	29
10	AB	94	91	86	00	00	30	05	85	00	AC	0F	A5	3E	0A	0C
20	06	2A	01	17	10	60	32	3A	BA	D7	18	1D	28	2D	2E	2F
30	30	31	33	35	37	39	3B	3D	3F	40	41	42	43	44	45	46
40	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53	54	55	56
50	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63	64	65	66
60	67	67	68	68	69	69	6A	6A	6B	6B	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously. ADDRESS and DATA should appear as FIG 1.

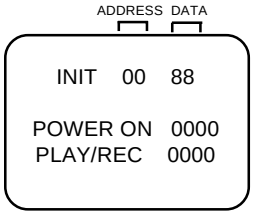
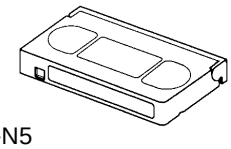
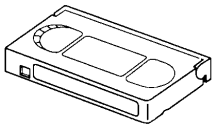
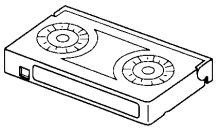
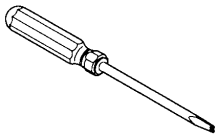
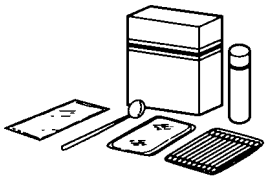
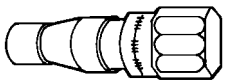
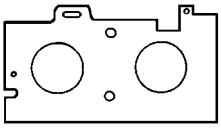
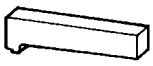
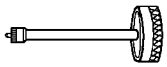
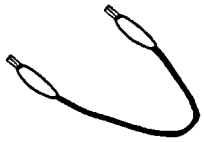
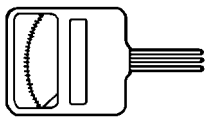


Fig. 1

3. ADDRESS is now selected and should "blink". Using the PLAY or STOP button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using PLAY or STOP until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

Alignment Tape  ST-N5 ST-NF	Back tension cassette gauge  70909103	Torque cassette gauge (KT-300NR)  70909199	Taper nut driver  70909228
VTR cleaning kit 	VTR lubrication kit 	Grease 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 
JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG153 X Value Adjustment Screwdriver 	JG154 Cable 
Tentelometer 			

Ref. No.	Part No.	Parts Name	Remarks
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Remove the Main PCB and Syscon PCB from the set.
   Be sure to place the parts on a paper so that they have no short-circuit each other.
2. Short circuit between **TP1001** and **Ground** with the cable JG154.
   (The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape.)
3. In case of using a cassette tape, press the STOP/EJECT button to insert or eject a cassette tape.
   Turn on the power and re-check the cable before checking the trouble points.

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig **(JG024A)** and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.

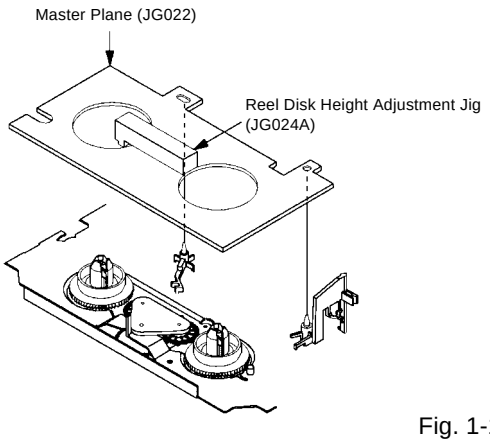


Fig. 1-1-A

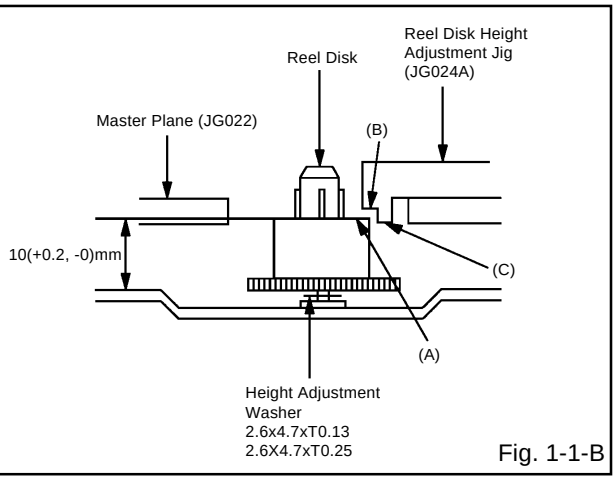


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

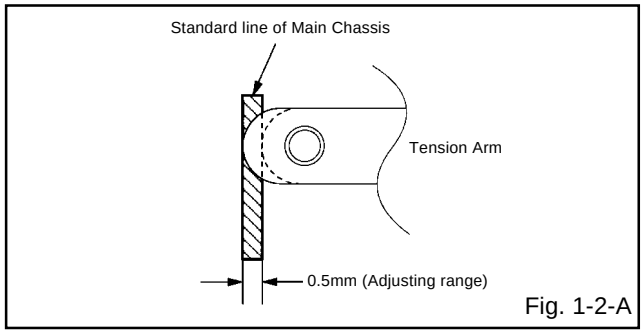


Fig. 1-2-A

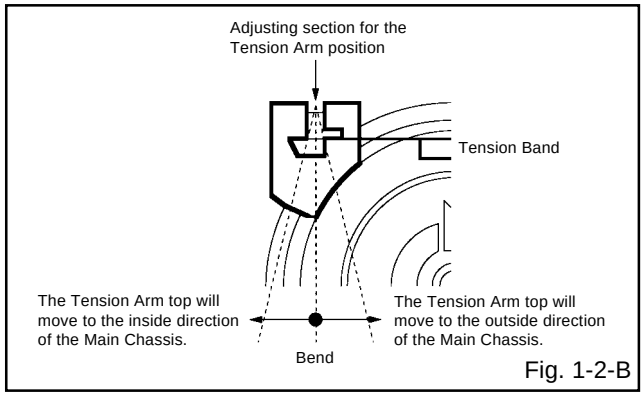


Fig. 1-2-B

1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

• USING A CASSETTE TYPE TORQUE TAPE **(KT-300NR)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(KT-300NR)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

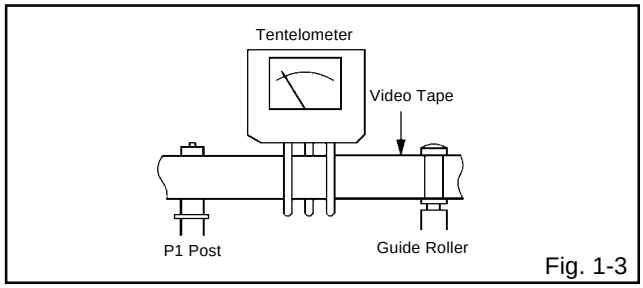


Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4-B)**
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

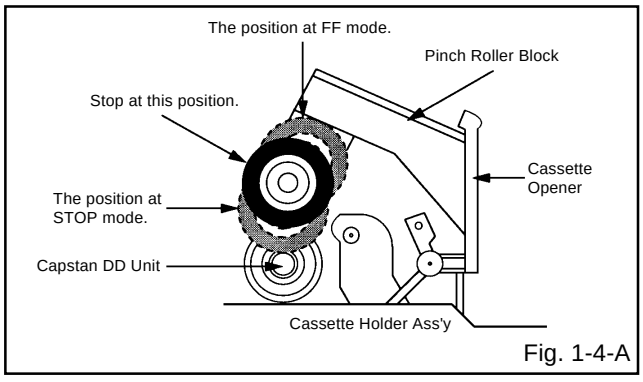


Fig. 1-4-A

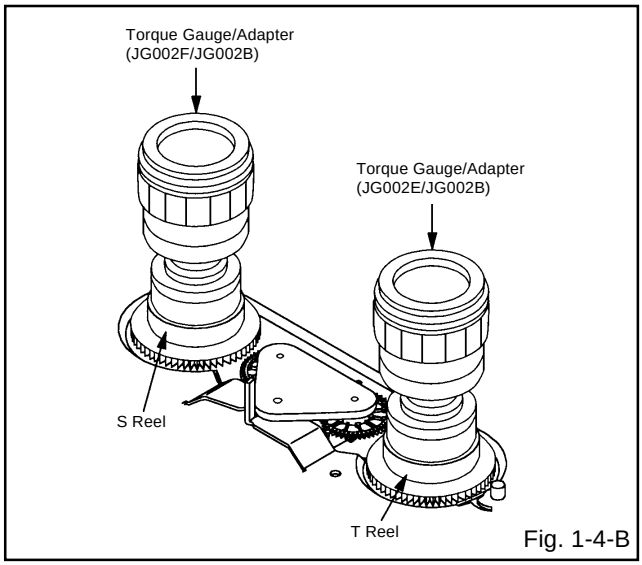


Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape.
2. Connect CH-1 of the oscilloscope to **TP4001 (Envelope)** and CH-2 to **TP1002 (SW Pulse)**.
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Taper Nut Driver slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

After adjustment, confirm and adjust A/C head. **(Refer to item 2-2)**

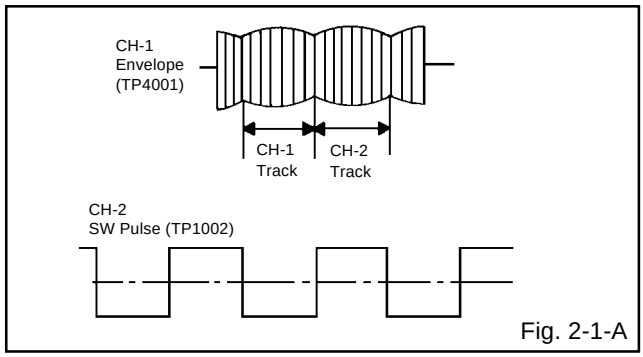


Fig. 2-1-A

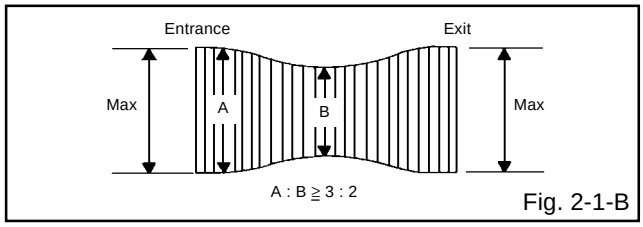


Fig. 2-1-B

MECHANICAL ADJUSTMENTS

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape.
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Cap as shown in **Fig. 2-2-A**.
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C**.
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

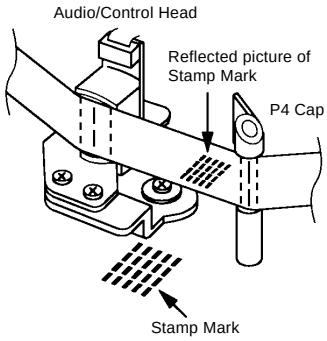


Fig. 2-2-A

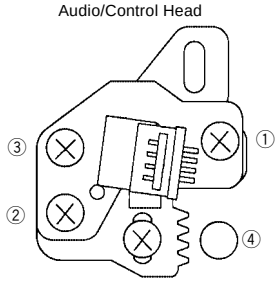


Fig. 2-2-B

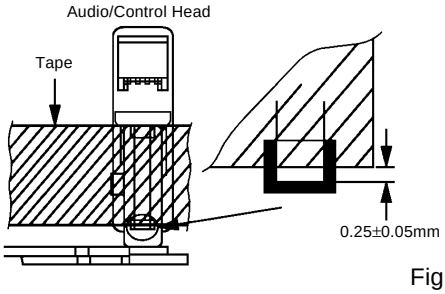


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP1002**, CH-2 to **TP4001** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape.
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the ④ of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3**.

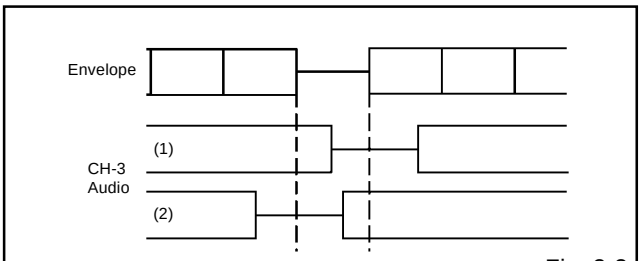
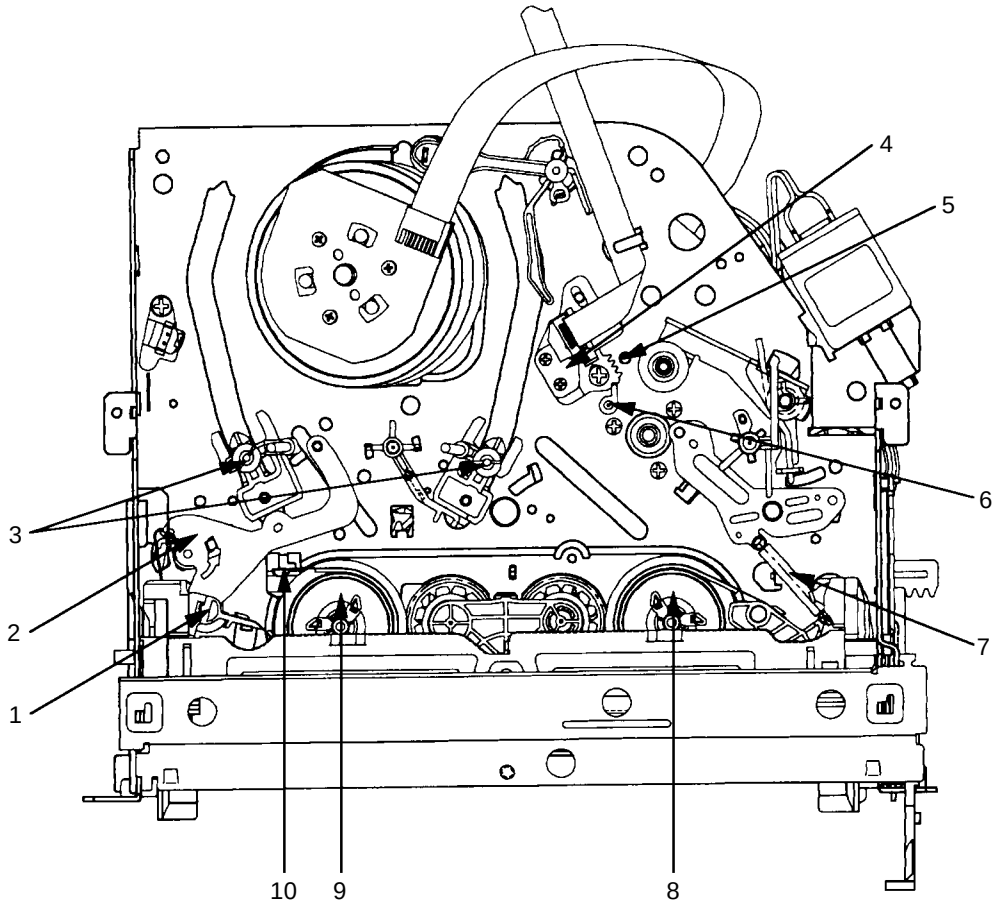


Fig. 2-3

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contractsection of the heat sink, Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

On-Screen Display Adjustment

1. Unplug the AC plug for more than 5 seconds to set the clock to the non-setting state.Then, set the volume level to minimum.
2. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control simultaneously to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

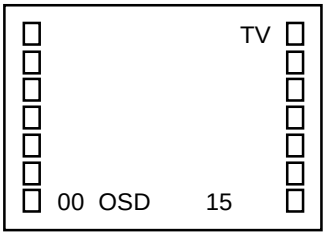


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	13	BRIGHTNESS
01	CUT OFF	14	CONTRAST
02	RF AGC	15	COLOR
03	VIF VCO	16	TINT
04	H VCO	17	SHARPNESS
05	H PHASE	18	FM LEVEL
06	V SIZE	19	LEVEL
07	V SHIFT	20	SEPARATION 1
08	R DRIVE	21	SEPARATION 2
09	B DRIVE	22	TEST MONO
10	R CUT OFF	23	TEST STEREO
11	G CUT OFF	24	X-RAY TEST
12	B CUT OFF		

Fig. 1-2

2. BASIC ADJUSTMENTS (VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape.
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button (3) on the remote control simultaneously until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

(If the above adjustments doesn't work well:)

5. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears.
6. When the REC indicator is blinking, press both VOL. DOWN button on the set and the channel button **(4)** on the remote control simultaneously and adjust the Tracking +/- button until the arising to the down of Head Switching Pulse becomes 6.5 ± 0.5H. **(Refer to Fig. 2-1-A, B)**
7. Press the Tracking Auto button.

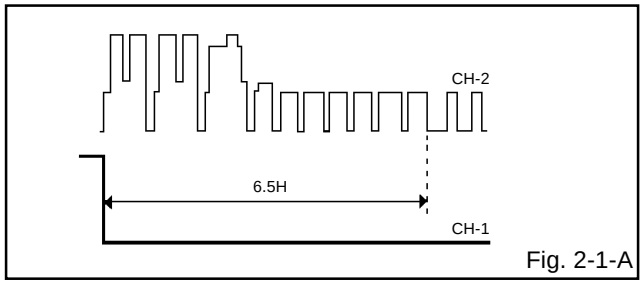


Fig. 2-1-A

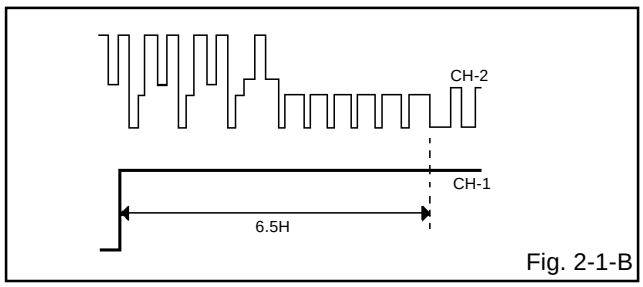


Fig. 2-1-B

2-2: RF AGC

1. Receive the VHF HIGH (63dB).
2. Connect the digital voltmeter between the **pin 5 of CP602** and the **pin 1 (GND) of CP602**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "RF AGC".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.9 ± 0.05V.

ELECTRICAL ADJUSTMENTS

2-3: VCO FREERUN

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the digital voltmeter between the **pin 7 of CP602** and the **pin 1 (GND) of CP602**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "VIF VCO".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5 ± 0.5V.

(TV SECTION)

2-4: CONSTANT VOLTAGE

1. Input DC12V to DC Jack and turn the Power ON.
2. Connect the digital voltmeter to the **F502** and **GND**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR501** until the DC voltage is 101 ± 0.5V.
5. Input AC120V to AC cord and remove the DC Jack cord. Check if the Power is ON before doing the above procedure.
6. Adjust the **VR502** until the AC voltage is 102 ± 0.5V.

2-5: CUT OFF

1. Adjust the unit to the following settings. R.DRIVE=64, B.DRIVE=64, R.CUT OFF=128, G.CUT OFF=128, B.CUT OFF=128, SUB BRIGHT=128, SUB CONTRAST=96.
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-6: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-7: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(10)** on the remote control to select "R CUT OFF".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT OFF", "G CUT OFF", "B CUT OFF", "R DRIVE" or "G DRIVE".
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUT OFF, G CUT OFF, B CUT OFF, R DRIVE, and G DRIVE at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-8: SUB BRIGHTNESS

1. Receive the black pattern*. (RF Input)
2. Using the remote control, set the brightness, contranst, color and tint to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "BRIGHTNESS".
4. Press the VOL. UP/DOWN button on the remote control until the screen begin to shine.
5. Receive the black pattern*. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustment 2~4.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-9: SUB TINT

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP803**.
3. Using the remote control, set the brightness, contranst, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "TINT".
5. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2.)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.

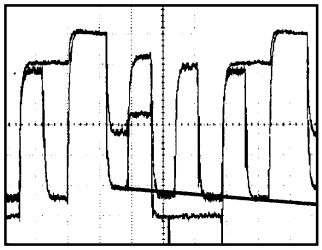


Fig. 2-2

ELECTRICAL ADJUSTMENTS

2-10: SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP801**.
3. Using the remote control, set the brightness, contranst, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "COLOR".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 120 ± 10% of the white level. **(Refer to Fig. 2-3)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.

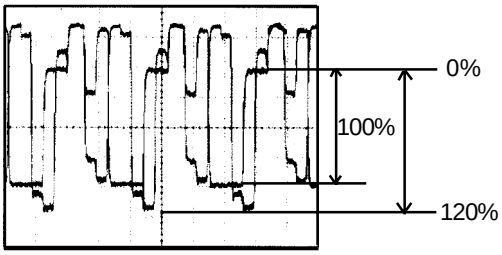


Fig. 2-3

2-11: SUB CONTRAST

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(14)** on the remote control to select "CONTRAST".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "96".
3. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 1~2.

2-12: HORIZONTAL PHASE

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "H PHASE".
3. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-13: VERTICAL SHIFT

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "V SHIFT".
3. Check if the step No. V. SHIFT is "1".
4. Adjust the **VR402** until the horizontal line becomes fit to notch of the shadow mask.

2-14: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "V SIZE".
3. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.
4. Receive a broadcast and check if the pictrue is mormal.

2-15: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-4)**

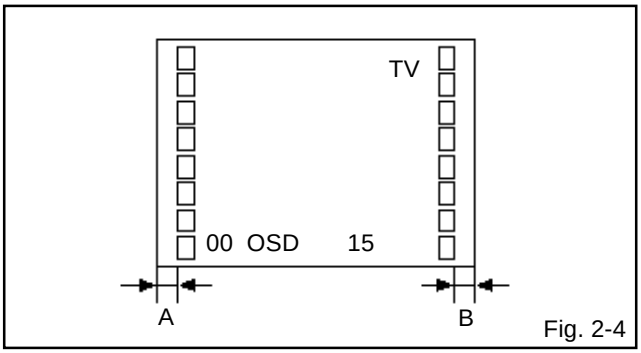


Fig. 2-4

2-16: SUB SHARPNESS

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "SHARPNESS".
2. Check if the step No. of SHARPNESS is "40".
3. Press the INPUT SELECT button on the remote control to set to theAV mode. Then perform the above adjustments 1~2.

2-17: H VCO

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "H VCO".
2. Check if the step No. of H VCO is "4".

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. (Refer to Fig. 3-1)
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

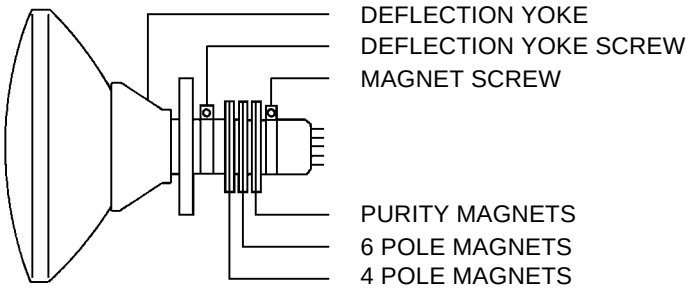


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

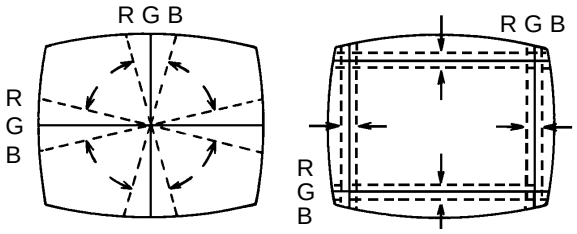


Fig. 3-2-a

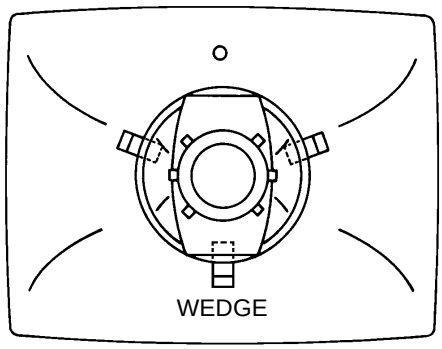
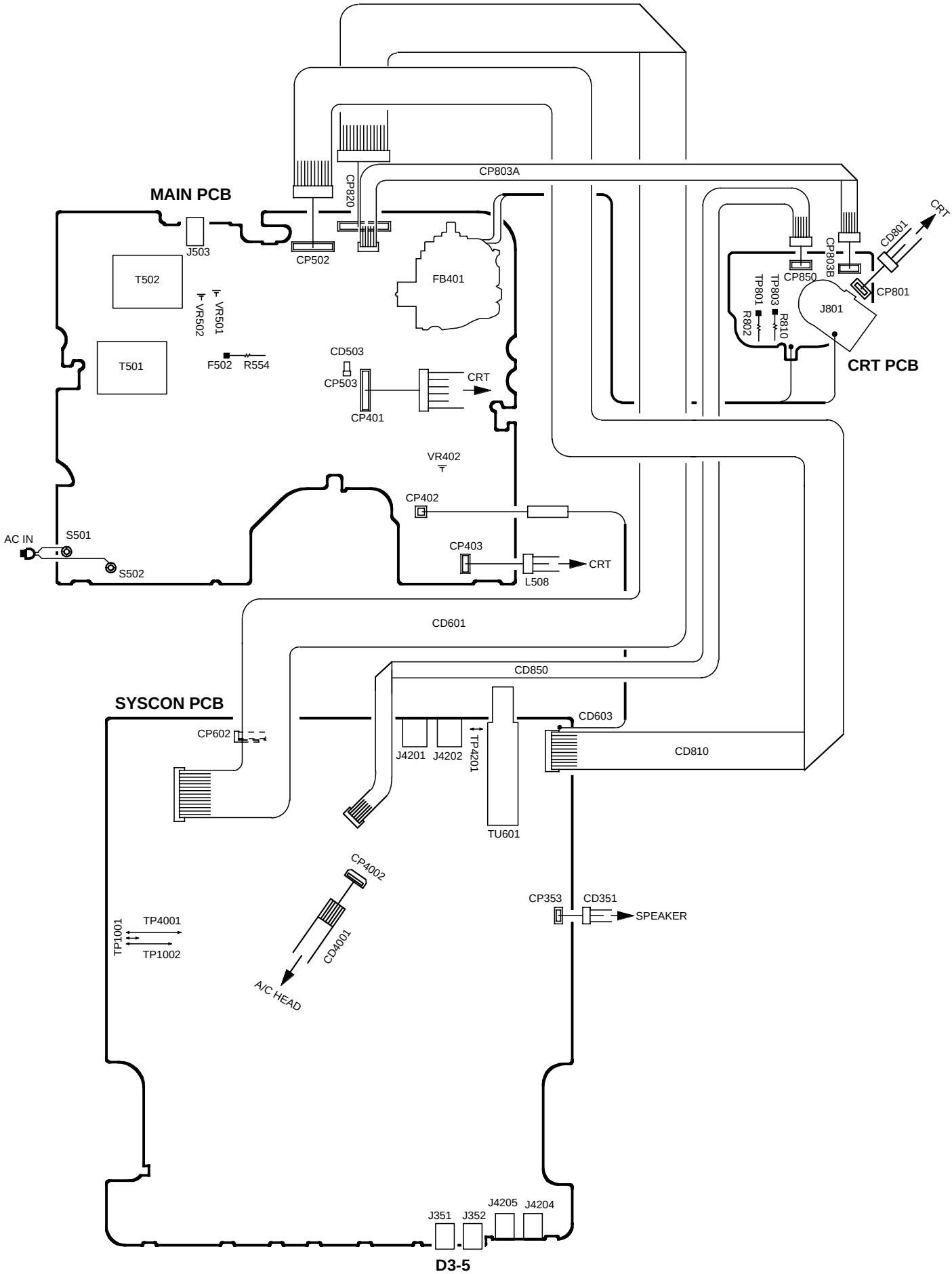


Fig. 3-2-b

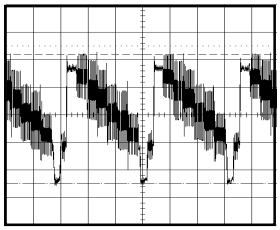
ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

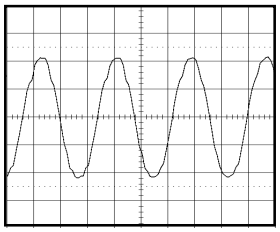


WAVEFORMS

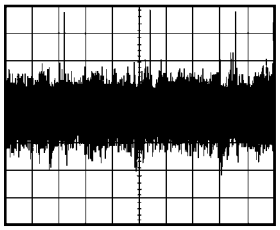
Y/C/AUDIO/CCD/HEAD AMP



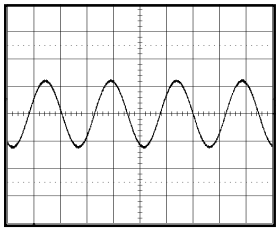
① PB
0.5V 20μs/div



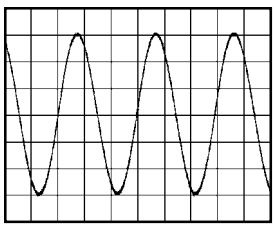
② POWER ON
100mV 0.1μs/div



③ PB
10mV 20us/div

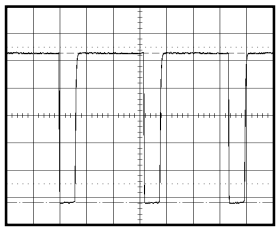


④ PB
0.5V 1ms/div

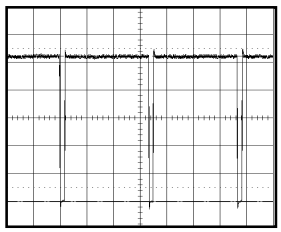


⑤ REC
10.0V 5us/div

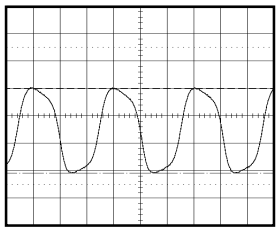
MICON



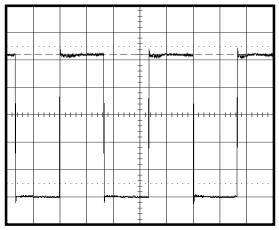
⑥ POWER ON
1.0V 20μs/div



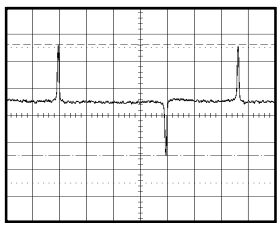
⑦ POWER ON
0.5V 10ms/div



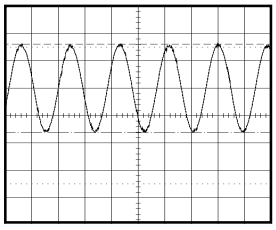
⑧ POWER ON
1.0V 10μs/div



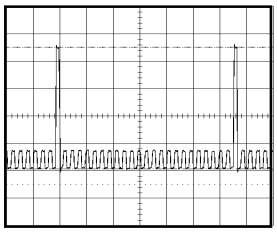
⑨ PB
1.0V 10ms/div



⑩ PB
1.0V 5ms/div

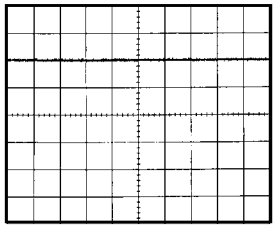


⑪ PB
0.5V 0.5ms/div

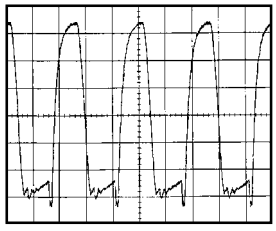


⑬ PB
1.0V 5ms/div

TV POWER

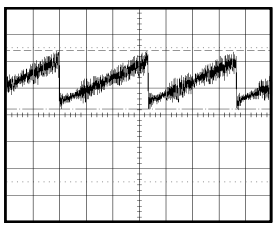


⑮ 5.0V 20ms/div



⑯ 500mV 5μs/div

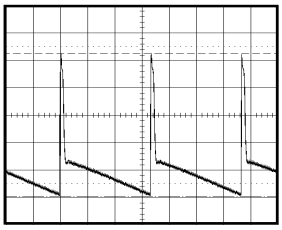
DEFLECTION



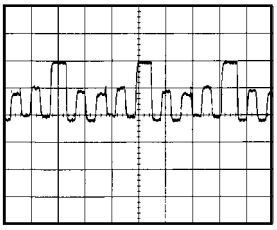
⑰ 0.5V 5ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

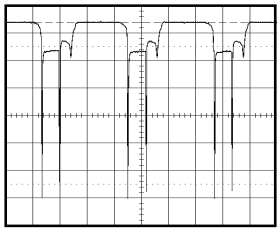


(18) 10.0V 5ms/div

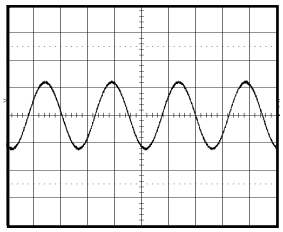


(23) 50.0V 20µs/div

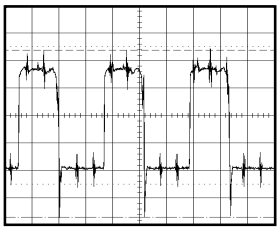
IN/OUT



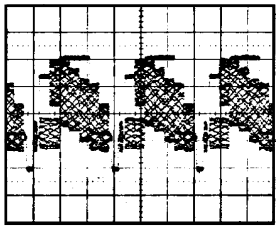
(19) 2.0V 20µs/div



(24) PB
0.5V 1ms/div

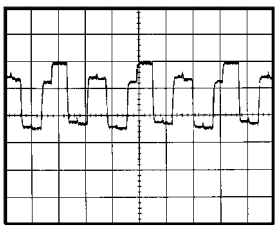


(20) 200mV 20µs/div



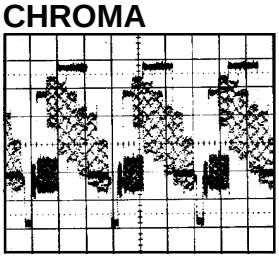
(25) 0.5V 20µs/div

CRT



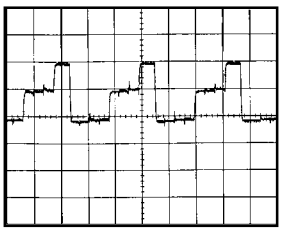
(21) 50.0V 20µs/div

CHROMA

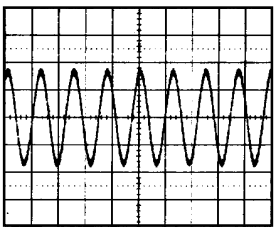


(26) 200mV 20µs/div

SOUND AMP



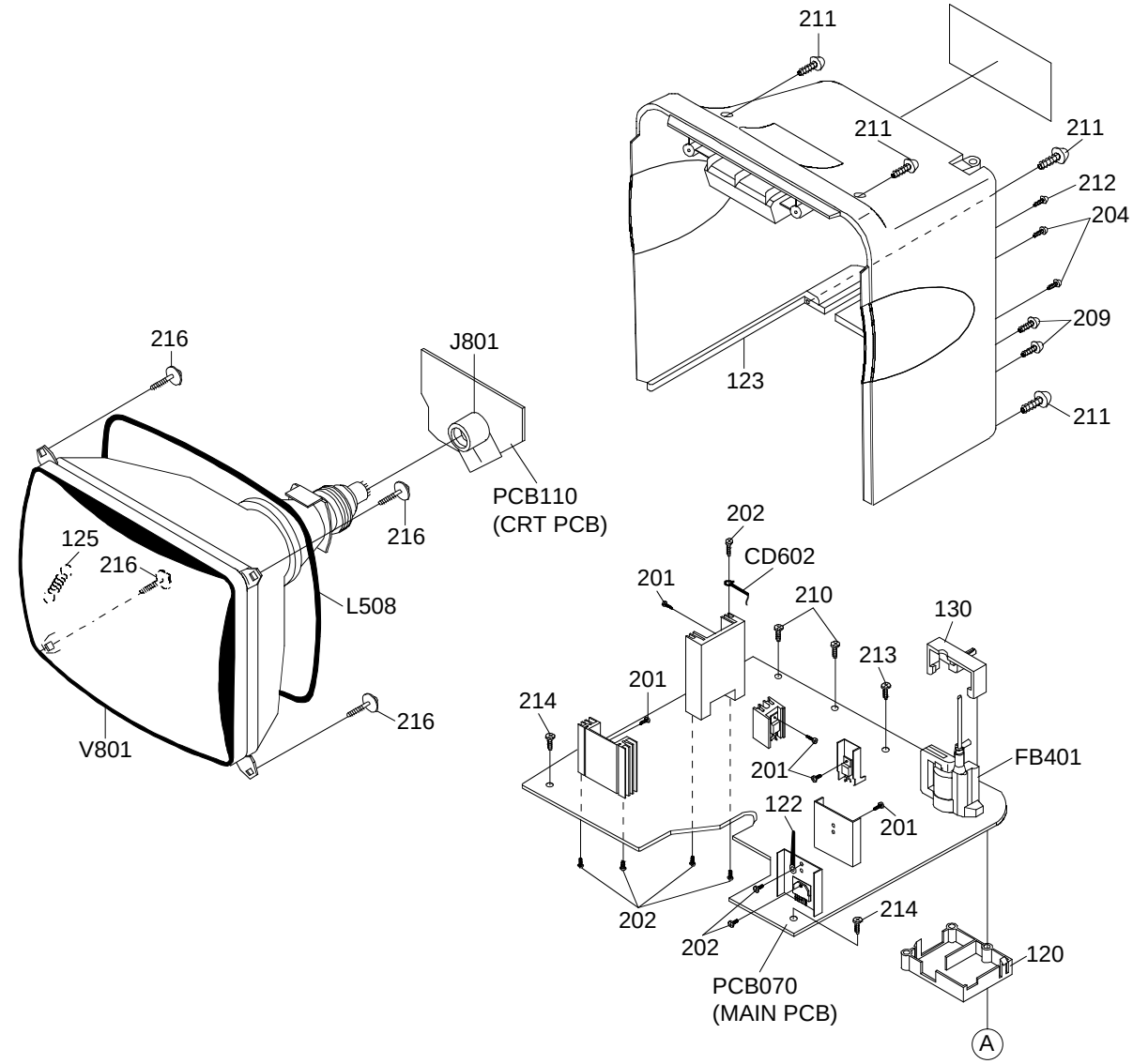
(22) 50.0V 20µs/div



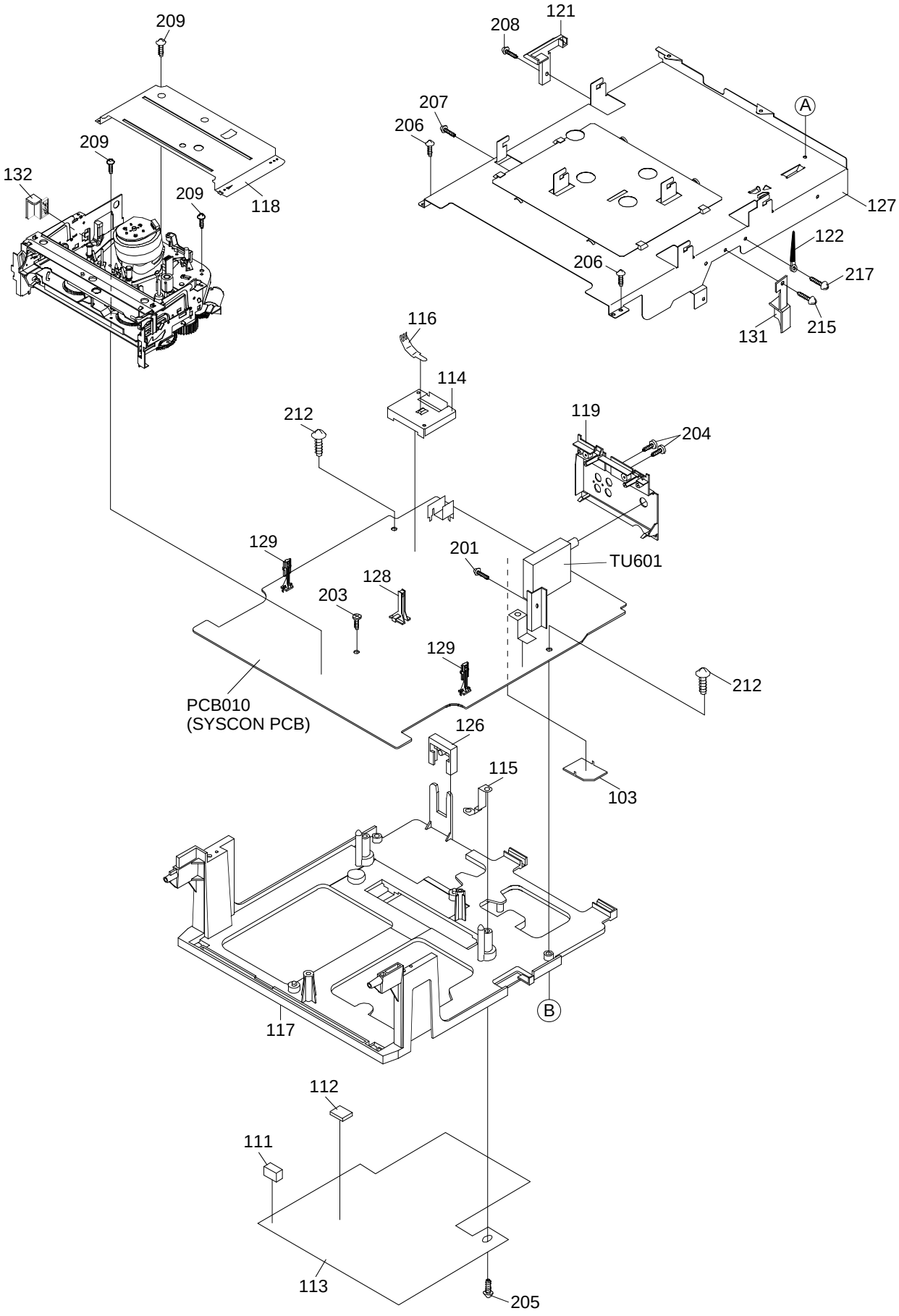
(27) 200mV 2ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

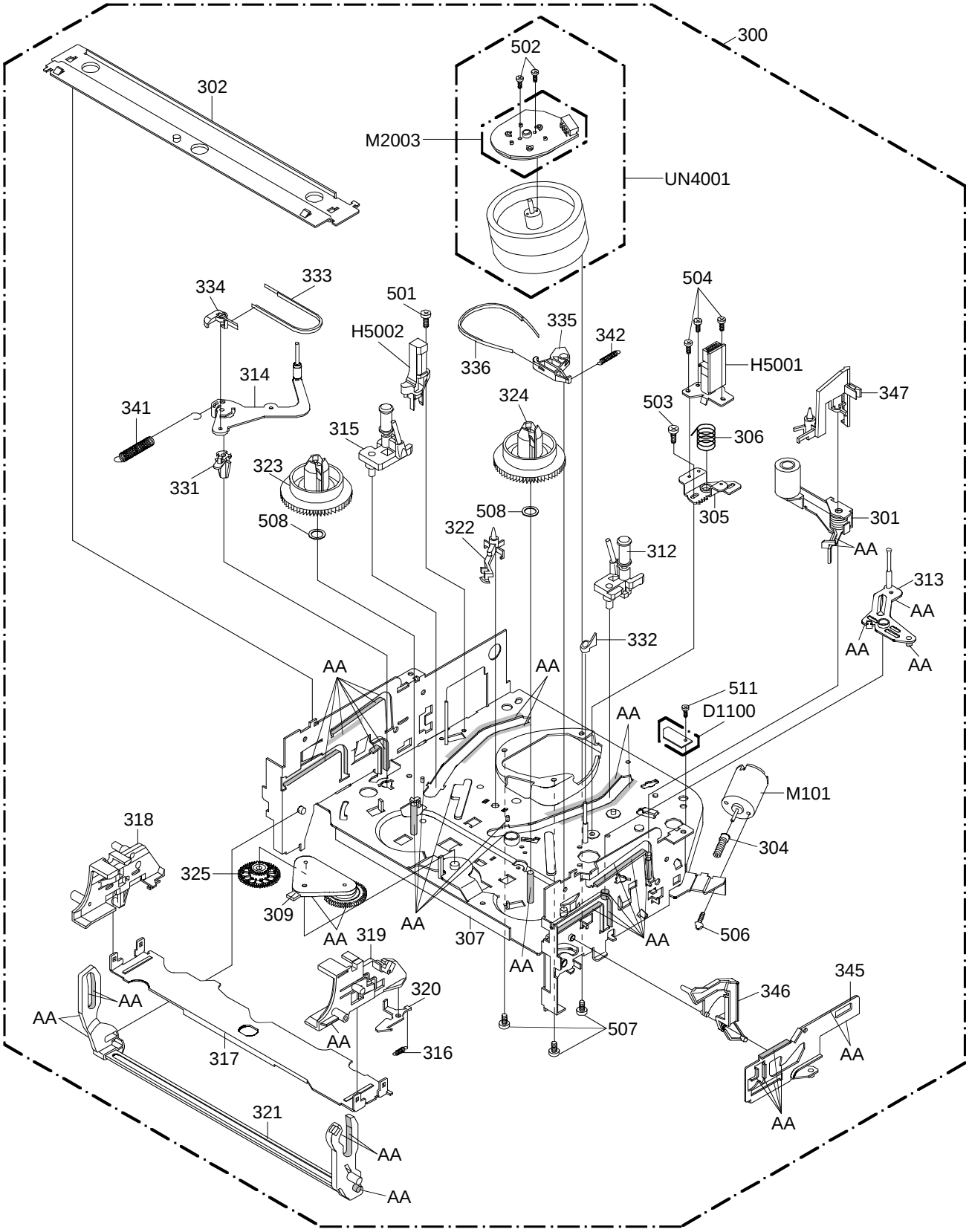
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



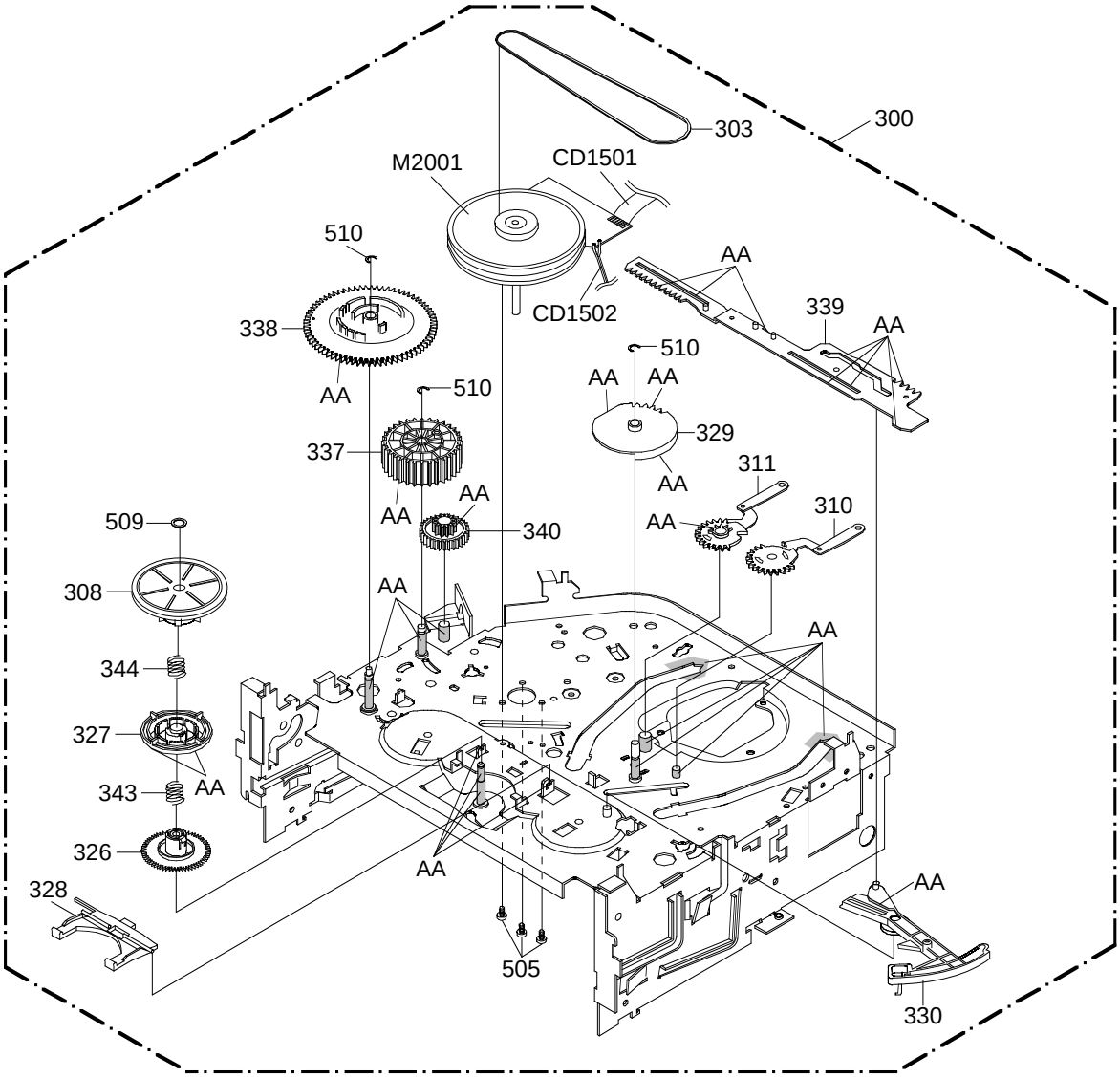
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section.
Check if the correct grease is applied for each position.

CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section.
Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	BZ610319	A5B006I720	CABINET,FRONT ASSY	
102	BZ710607	701WPJB559	CABINET,FRONT	
103	BZ710282	752WSAA033	SHIELD,IC	
104	BZ710608	712WPJB307	FLAP	
105	BZ710010	743WKA0032	SPRING,FLAP	
106	BZ710288	713WPA0124	GUIDE,REMOCON	
107	BZ710287	713WPA0123	GLASS,LED	
108	BZ710609	735WPJA528	BUTTON,FRAME	
109	BZ710470	738WPAA013	BUTTON,BASE	
111	BZ710251	800WFA0037	CUSHION	15x5xT=6
112	BZ710252	800WFA0038	CUSHION	10x10xT=2
113	BZ710248	752WSAA028	SHIELD,BOTTOM	
114	BZ710466	752WSA0230	SHIELD,CASE HEAD AMP	
115	BZ710610	753WSA0144	PLATE,BOTTOM-EARTH	
116	BZ710331	753WUAA006	SPRING,EARTH HEAD AMP	
117	BZ710611	761WPA0230	HOLDER,DECK	
118	BZ710612	752WSA0263	SHIELD,COVER DECK	
119	BZ710280	771WPA0255	PLATE,JACK	
120	BZ710459	761WPA0223	HOLDER,FBT	
121	BZ710613	761WPA0232	HOLDER,M/PCB	
122	BZ710039	8995034000	CORD CLIP UL CO.	
123	BZ710614	702WPAA199	CABINET,BACK	
125	BZ710294	741WUA0002	SPRING,EARTH	
126	BZ710615	761WPA0231	HOLDER,BUSH	
127	BZ710616	752WSA0251	PLATE,DECK SHIELD	
128	BZ710497	85OP700037	HOLDER,LED	
129	BZ710498	85OP700038	HOLDER,END SENSOR	
130	BZ710617	761WPAA052	COVER FBT	
131	BZ710619	755WPAA013	PLATE,COVER LIGHT (R)	
132	BZ710618	755WPAA012	PLATE,COVER LIGHT (L)	
201	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
202	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
203	BZ710028	8110330804	SCREW,TAP TITE(P) FLAT	3x8
204	BZ710031	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
205	BZ710158	8110630604	SCREW,TAP TITE(P) BRAZIER	3x6
206	BZ710030	8110630804	SCREW,TAP TITE(P) BRAZIER	3x8
207	BZ710017	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
208	BZ710240	8107230804	SCREW,TAP TITE(S) BIND	3x8
209	BZ710032	8110630A24	SCREW,TAP TITE(P) BRAZIER	3x12
210	BZ710337	8107930604	SCREW,CUP(S)	3x6
211	BZ710035	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
212	BZ710036	8117540B04	SCREW,TAPPING(B0) TRUSS	4x20
213	BZ710409	8107630B04	SCREW,TAP TITE(S) BRAZIER	3x20
214	BZ710147	8107630604	SCREW,TAP TITE(S) BRAZIER	3x6
215	BZ710018	8107630804	SCREW,TAP TITE(S) BRAZIER	3x8
216	BZ710450	8141J40B84	SCREW,TAP TITE(P) GW15	4x28
217	BZ710299	8107230604	SCREW,TAP TITE(S) BIND	3x6
---	BZ710300	792WHA0281	PACKAGE,TOP	
---	BZ710301	792WHA0282	PACKAGE,BOTTOM	
---	BZ710620	793WCDB135	GIFT BOX	
---	BZ614368	J5B00601	INSTRUCTION BOOK	

CHASSIS REPLACEMENT PARTS LIST

	Location No.	TSB P/N	Reference No.	Description	
	300	BZ610320	A5B006B420A	DECK ASSY	A5B006B420A
	301	BZ710564	85OA400234	PINCH ROLLER BLOCK	
	302	BZ710514	85OP900746	BRACKET,TOP 3V	
	303	BZ710193	85OP200290	BELT,CAPSTAN (S)	
	304	BZ710515	85OP600581	WORM	
	305	BZ710094	85OP500083	BASE,AC HEAD	
	306	BZ710112	85OP800324	SPRING,AC HEAD	
	307	BZ710516	85OA000459	MAIN CHASSIS ASS'Y	
	308	BZ710517	85OA200089	CLUTCH ASS'Y	
	309	BZ710518	85OA200090	ARM IDLER ASS'Y	
	310	BZ710519	85OA300065	LOADING ARM S UNIT	
	311	BZ710520	85OA300066	LOADING ARM T UNIT	
	312	BZ710521	85OA400223	INCLINED BASE T UINT 3S	
	313	BZ710522	85OA400232	P5 ARM ASS'Y 2	
	314	BZ710523	85OA400233	TENSION ARM ASS'Y (WT)	
	315	BZ710524	85OA400231	INCLINED BASE S UNIT	
	316	BZ710525	85OP800358	SPRING,LOCKER	
	317	BZ710526	85OP900736	CASS,HOLDER	
	318	BZ710527	85OP900748	CASS,SIDE L	
	319	BZ710528	85OP900749	CASS,SIDE R	
	320	BZ710529	85OP900739	LOCKER,R	
	321	BZ710530	85OA900228	LINK UNIT	
	322	BZ710531	85OP000496	POST,CASS GUIDE	
	323	BZ710532	85OP200316	REEL,S (S)	
	324	BZ710533	85OP200317	REEL,T (S)	
	325	BZ710534	85OP200308	GEAR,IDLER	
	326	BZ710535	85OP200311	GEAR,CLUTCH	
	327	BZ710536	85OP200312	GEAR,COUPLING	
	328	BZ710537	85OP200313	LEVER,CLUTCH	
	329	BZ710538	85OP300194	GEAR,MAIN LOADING	
	330	BZ710092	85OP400490	LEVER,TENSION	
	331	BZ710093	85OP400492	HOLDER,TENSION	
	332	BZ710366	85OP400520	CAP.P4	
	333	BZ710539	85OP400539	BAND,TENSION	
	334	BZ710540	85OP400533	CONNECT,TENSION	
	335	BZ710541	85OP600573	ARM,BRAKE T	
	336	BZ710542	85OP600583	BAND,BRAKE T	
	337	BZ710543	85OP600577	CAM,PINCH ROLLER	
	338	BZ710544	85OP600578	CAM,MAIN	
	339	BZ710545	85OP600579	ROD,MAIN	
	340	BZ710546	85OP600582	GEAR,JOINT	
	341	BZ710110	85OP800322	SPRING,TENSION	
	342	BZ710547	85OP800360	SPRING,BRAKE T	
	343	BZ710548	85OP800355	SPRING,COUPLING	
	344	BZ710549	85OP800356	SPRING,RING	
	345	BZ710565	85OP900750	LEVER,LINK 2	
	346	BZ710551	85OP900744	LEVER,FLAP	
	347	BZ710552	85OP900745	CASS,OPENER	
	501	BZ710049	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
	502	BZ710051	810A123504	SEMS A	M2.3x5.0
	503	BZ710371	8107226404	SCREW,TAP TITE(S) BIND	2.6x4
	504	BZ710046	8102120604	SCREW,PAN	M2x6
	505	BZ710050	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
	506	BZ710553	810A130404	SCREW/WASHER(A)	M3x4
	507	BZ710219	810A126504	SCREW/WASHER(A)	M2.6x5
	508	BZ710056	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
	509	BZ710054	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
	510	BZ710058	83ETW30000	E-RING	3.0
	511	BZ710017	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
	CD1501	BZ614338	122H071603	CORD JUMPER	SMCD-7X151
	CD1502	BZ614339	122Y021902	CORD JUMPER	2Y021902
	D1100	BZ410060	DAK0000170	DEW SENSORCW/AL,PLATE	HDP-05-26
	H5001	BZ710040	1523D91034	HEAD (AUDIO CONTROL)	HVMXA1072A
	H5002	BZ710041	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
⚠	M101	BZ710566	1596P98001	MOTOR (LOADING)	MXN13FB12K3
⚠	M2001	BZ710555	1510S98036	CAPSTAN DD UNIT	F2QVB08
⚠	M2003	BZ710373	1589S11014	MICRO MOTOR	I2OAL03
⚠	UN4001	BZ610250	A4E104A500	CYLINDER UNIT ASS'Y	A4E104A500

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description	
			RESISTORS		
⚠R404	BZ210112	R4X5T6152F	R,METAL	1.5K OHM 1/6W	
R409	BZ210225	R3X181271J	R,METAL OXIDE	270 OHM 1W	
⚠R439	BZ210089	R4X5T6273F	R,METAL	27K OHM 1/6W	
⚠R440	BZ210090	R4X5T6822F	R,METAL	8.2K OHM 1/6W	
⚠R441	BZ210091	R4X5T6104F	R,METAL	100K OHM 1/6W	
⚠R442	BZ210114	R4X5T6123F	R,METAL	12K OHM 1/6W	
⚠R443	BZ210105	R4X5T6183F	R,METAL	18K OHM 1/6W	
⚠R447	BZ210185	R65582151J	R,FUSE	150 OHM 1/2W	
⚠R450	BZ210187	R65581100J	R,FUSE	10 OHM 1W	
⚠R500	BZ210080	R0G3K2275K	RC	2.7M OHM 1/2W	
⚠R501	BZ210188	R5Y2CD010J	R,CEMENT	1 OHM 5W	
⚠R502	BZ210215	R3X28B100J	R,METAL OXIDE	10 OHM 3W	
⚠R505	BZ210158	R002T2563J	RC	56K OHM 1/2W	
⚠R511	BZ210226	R002T4105J	RC	1M OHM 1/4W	
⚠R528	BZ210190	R63581R22J	R,FUSE	0.22 OHM 1W	
⚠R529	BZ210201	R002T4272J	RC	2.7K OHM 1/4W	
⚠R530	BZ210063	R3X181R22J	R,METAL OXIDE	0.22 OHM 1W	
⚠R544	BZ210097	R3X18A1R5J	R,METAL OXIDE	1.5 OHM 2W	
⚠R545	BZ210217	R3X181331J	R,METAL OXIDE	330 OHM 1W	
⚠R547	BZ210028	R3X28B6R8J	R,METAL OXIDE	6.8 OHM 3W	
⚠R802	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W	
⚠R805	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W	
⚠R810	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W	
			CAPACITORS		
C354	BZ110104	E0EL02332M	CE	3300 UF 16V	
⚠C406	BZ110194	E5EZU4101M	CE	100 UF 35V	
⚠C407	BZ110053	E02LF3102M	CE	1000 UF 25V	
C414	BZ110085	P21503475K	CMP	4.7 UF 250V ECQ-E	
C421	BZ110014	E5EZ04102M	CE	1000 UF 35V	
⚠C422	BZ110121	E5EZTD010M	CE	1 UF 250V	
⚠C423	BZ110086	P447F2274J	CMPP	0.27 UF 200V FHS	
⚠C424	BZ210161	P4N8FJ682H	CMPP	0.0068UF 1.25KV	
⚠C425	BZ110176	C03L0R7Q2K	CC	470 PF 2KV R	
C426	BZ110182	C03L0R713K	CC	0.001 UF 2KV R	
C430	BZ110182	C03L0R713K	CC	0.001 UF 2KV R	
⚠C433	BZ110195	E02LU8220M	CE	22 UF 100V	
⚠C502	BZ110088	C0JBB05H3K	CC	0.0022UF 500V B	
⚠C503	BZ110088	C0JBB05H3K	CC	0.0022UF 500V B	
⚠C505	BZ110138	P2472B224M	CMP	0.22UF 275V PHE840	
⚠C507	BZ110130	E62NFC221M	CE	220 UF 200V	
C513	BZ110182	C03L0R713K	CC	0.001 UF 2KV R	
C515	BZ110091	E62FF3152M	CE	1500 UF 25V	
C518	BZ110181	C03L0R7H3K	CC	0.0022UF 2KV R	
⚠C523	BZ110196	CB3930MQ3M	CC	0.0047UF 250V	
C525	BZ110176	C03L0R7Q2K	CC	470 PF 2KV R	
⚠C534	BZ110139	E62NFB101M	CE	100 UF 160V	
C535	BZ110129	E5EZF2222M	CE	2200 UF 16V	
⚠C536	BZ110029	E5EZT3471M	CE	470 UF 25V	
⚠C537	BZ110032	E5EZF3102M	CE	1000 UF 25V	
⚠C538	BZ110197	E02LU5470M	CE	47 UF 50V	
⚠C540	BZ110198	E02LU50R1M	CE	0.1 UF 50V	
C544	BZ110032	E5EZF3102M	CE	1000 UF 25V	
C546	BZ110181	C03L0R7H3K	CC	0.0022UF 2KV R	
C551	BZ110091	E62FF3152M	CE	1500 UF 25V	
C801	BZ110182	C03L0R713K	CC	0.001 UF 2KV R	
C1071	BZ110199	CHG0B04U2J	CC	680 PF 50V B	or
	BZ110200	CHGTB04U2J	CC	680 PF 50V B	
			DIODES		
D401	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC	
D402	BZ410092	D2WXN49370	DIODE,SILICON	1N4937	
D404	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D405	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D406	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77	
D407	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77	
⚠D408	BZ410018	D94TA27011	DIODE,ZENER	HZ27-1L TD	
⚠D409	BZ410017	D94TA11B13	DIODE,ZENER	HZ11B3L TD	
⚠D411	BZ410092	D2WXN49370	DIODE,SILICON	1N4937	
⚠D412	BZ410092	D2WXN49370	DIODE,SILICON	1N4937	
⚠D413	BZ410092	D2WXN49370	DIODE,SILICON	1N4937	
D414	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC	
D501	BZ410061	D97U01001B	DIODE,ZENER	MTZJ10B T-77	
D502	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
⚠D503	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC	
⚠D504	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC	
D505	BZ410018	D94TA27011	DIODE,ZENER	HZ27-1L TD	
D506	BZ410091	D230PF6DT0	DIODE,SILICON	FEPF6DT	
D507	BZ410100	D97U01801B	DIODE,ZENER	MTZJ18B T-77	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D508	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D509	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
⚠D510	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
D511	BZ410101	D28TELS6N6	DIODE RECTIFER	10ELS6N-TA1B2
D512	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D513	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D514	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D515	BZ410037	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D516	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D517	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D518	BZ410092	D2WXN49370	DIODE,SILICON	1N4937
D519	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D520	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D521	BZ410076	D2WXB290S0	DIODE,SILICON	SB290S
D522	BZ410065	D97U01601B	DIODE,ZENER	MTZJ16B T-77
D523	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D524	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D525	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D526	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D528	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D530	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D531	BZ410076	D2WXB290S0	DIODE,SILICON	SB290S
D533	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D534	BZ410100	D97U01801B	DIODE,ZENER	MTZJ18B T-77
⚠D535	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D536	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D537	BZ410011	D28TELS2N2	DIODE RECTIFER	10ELS2N-TA1B2
⚠D539	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D540	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D541	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D542	BZ410011	D28TELS2N2	DIODE,RECTIFER	10ELS2N-TA1B2
⚠D545	BZ410076	D2WXB290S0	DIODE,SILICON	SB290S
D546	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D547	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D548	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D550	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D551	BZ410067	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D601	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D602	BZ410058	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D603	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D604	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D605	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D606	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D608	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D611	BZ410023	D97U09R11B	DIODE,ZENER	MTZJ9.1B T-77
D613	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D614	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D615	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D616	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D617	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D618	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1001	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1002	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1003	BZ410095	0010100320	INFRARED LED	LNA2702L010R
D1004	BZ410108	D97U05R61C	DIODE,ZENER	MTZJ5.6C T-77
D1005	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D1006	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D1010	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3003	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D3005	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D4201	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D4206	BZ410034	D97U01301B	DIODE,ZENER	MTZJ13B T-77
D4209	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D4210	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D4211	BZ410054	0021721150	LED	SLR-342VCT32
D4212	BZ410054	0021721150	LED	SLR-342VCT32
			ICS	
IC351	BZ611001	I01DP75110	IC	AN7511
⚠IC401	BZ611053	I01TD55220	IC	AN5522
⚠IC501	BZ611015	I1KA97805A	IC	KIA7805API
⚠IC504	BZ611096	I0QD023680	IC	NJM2368D
⚠IC506	BZ410088	0002E00610	PHOTO COUPLER	LTV-817M-VB
IC601	BZ611055	I06FC61206	IC	M61206FP
IC1001	BZ611093	I56F57071A	IC	OEC7071A
IC1003	BZ611057	IC7J0311A0	IC	R3111N311A/C-TR
IC1099	BZ610315	A5B006B015	IC	S-24C04BDP-LA
IC3002	BZ611054	I1KA98R050	IC	KIA78R05PI

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description		
			ICS		
IC4001	BZ611085	I03F301MN0	IC	LA71201M-N-MPB	
			TRANSISTORS		
Q401	BZ510086	TPATB03003	COMPOUND TRANSISTOR	KRA102MAT	
Q402	BZ510052	TF2002P4M0	THYRISTOR	2P4M	
Q404	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
⚠Q405	BZ510089	TC5T01627Y	TRANSISTOR,SILICON	2SC1627_Y(TPE2)	
⚠Q406	BZ510036	TD30026270	TRANSISTOR,SILICON	2SD2627LS-CBC11	
Q407	BZ510086	TPATB03003	COMPOUND TRANSISTOR	KRA102MAT	
Q408	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q501	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q502	BZ510044	TC5T021204	TRANSISTOR,SILICON	2SC2120Y(TPE2)	
Q503	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
Q504	BZ510096	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT	
⚠Q505	BZ510053	T410029030	FET	2SK2903-01MR	
Q507	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q508	BZ510004	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA	
Q509	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q510	BZ510093	TJXG5NC500	FET	STP5NC50FP	
Q511	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q512	BZ510077	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT	
Q514	BZ510023	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP	
Q515	BZ510096	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT	
Q516	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
Q517	BZ510077	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT	
Q518	BZ510023	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP	
Q601	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q602	BZ510090	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK	
Q603	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q604	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q612	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
⚠Q804	BZ510087	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT	
⚠Q805	BZ510087	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT	
⚠Q806	BZ510087	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT	
Q1001	BZ410107	0002700690	PHOTO COUPLER	RPI-303	or
	BZ410049	0002700590	PHOTO COUPLER	RPI-301	
Q1003	BZ410106	0002700680	PHOTO COUPLER	RPI-352C40N	or
	BZ410096	0002700670	PHOTO COUPLER	RPI-352Q02	
Q1004	BZ510067	TNAAC05002	COMPOUND TRANSISTOR		
Q1005	BZ410107	0002700690	PHOTO COUPLER	RPI-303	or
	BZ410049	0002700590	PHOTO COUPLER	RPI-301	
Q1006	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q1008	BZ410097	0000M00390	PHOTO TRANSISTOR	ST-304L	
Q1009	BZ410106	0002700680	PHOTO COUPLER	RPI-352C40N	or
	BZ410096	0002700670	PHOTO COUPLER	RPI-352Q02	
Q1013	BZ410097	0000M00390	PHOTO TRANSISTOR	ST-304L	
Q1024	BZ510067	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK	
Q3001	BZ510060	TB3T011310	TRANSISTOR,SILICON	2SB1131(S,T)-AE	
Q3002	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q3005	BZ510042	TDWT00400E	TRANSISTOR,SILICON	2SD400E	
Q3006	BZ510042	TDWT00400E	TRANSISTOR,SILICON	2SD400E	
Q3007	BZ510042	TDWT00400E	TRANSISTOR,SILICON	2SD400E	
Q4001	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q4002	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q4003	BZ510072	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK	
Q4005	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)	
Q4006	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT	
Q4007	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4009	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4010	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4011	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4012	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4203	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q4205	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q4206	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q4210	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q4212	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
			COILS &TRANSFORMERS		
L401	BZ310004	021679472K	COIL	4.7 MH	
⚠L501	BZ310099	029T000092	COIL,LINE FILTER	1R0A103F24	
L503	BZ310083	021767100K	COIL	10 UH	
⚠L508	BZ310096	028R090008	COIL,DEGAUSS	8R090008	
L602	BZ310041	02167F101J	COIL	100 UH	
L603	BZ310040	02167F470J	COIL	47 UH	
L604	BZ310124	02AHA896A1	CORE,FERRITE	W5T18.4X10X9.6	
L607	BZ310058	021LA6220K	COIL	22 UH	
L608	BZ310041	02167F101J	COIL	100 UH	
L613	BZ310136	021LA63R3K	COIL	3.3 UH	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
		COILS &TRANSFORMERS		
L614	BZ310165	021LA6151K	COIL	150 UH
L618	BZ310152	0331920018	COIL	3192001
L801	BZ310002	021673101K	COIL	100 UH
L1001	BZ310009	021LA62R2K	COIL	2.2 UH
L4001	BZ310039	02167F220J	COIL	22 UH
L4003	BZ310041	02167F101J	COIL	100 UH
L4004	BZ310039	02167F220J	COIL	22 UH
L4005	BZ310040	02167F470J	COIL	47 UH
L4006	BZ310040	02167F470J	COIL	47 UH
L4007	BZ310024	0326230038	COIL,TRAP	2623003
L4201	BZ310042	021LA6101K	COIL	100 UH
L4205	BZ310041	02167F101J	COIL	100 UH
T401	BZ310157	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠T501	BZ310166	0481290834	TRANSFORMER,SWITCHING	81290834
⚠T502	BZ310167	0481290824	TRANSFORMER,SWITCHING	81290824
T4001	BZ310114	031626009R	COIL,BIAS OSC	1626009
		JACKS		
J351	BZ614361	060J131015	HEADPHONE JACK	MSJ-2000
⚠J352	BZ614361	060J131015	HEADPHONE JACK	MSJ-2000
⚠J503	BZ614145	0602602006	JACK,DC	HEC0824-010010
⚠J801	BZ614004	066X120014	SOCKET,CATHODE RAY TUBE	HPS3200-010501
J4201	BZ614167	060Q401050	RCA JACK	AV2-20D-2
J4202	BZ614167	060Q401050	RCA JACK	AV2-20D-2
J4204	BZ614321	060Q401076	RCA JACK	AV1-09D-4
J4205	BZ614322	060Q401077	RCA JACK	AV1-09D-3
		SWITCHES		
SW1001	BZ612014	0508A11002	SWITCH(LEAF)	MXS01380MPP0
SW4202	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4203	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4204	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4205	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4206	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4207	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4208	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4209	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4210	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW4211	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
		VARIABLE RESISTORS		
VR402	BZ210227	V1263Q3BT7	VOLUME,SEMI FIXED	RH0683CS3R
VR501	BZ210128	V1163H3BTC	VOLUME,SEMI FIXED	EVNCYAA03BE3
VR502	BZ210068	V1163Q3BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ3
		P.C.BOARD ASSEMBLIES		
⚠PCB010	BZ610316	A5B006I010	PCB ASS'Y	VMA238A
⚠PCB070	BZ610317	A5B006I070	PCB ASS'Y	TMA527A
⚠PCB110	BZ610318	A5B006I110	PCB ASS'Y	TCA378A
		MISCELLANEOUS		
ANT001	BZ614149	125C108027	ANTENNA ROD	T4-216BNK-BK
B302	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B501	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B502	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B503	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B505	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B507	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B602	BZ310130	024HT03564	CORE,BEADS	W4BRH3.5X6X1
CD351	BZ614363	06CH12437A	CORD,CONNECTOR	CH12437A
⚠CD501	BZ614341	120R414903	CORD,AC BUSH	0R414903
CD503	BZ614133	069X620040	CONNECTOR	JM-2BK-61
⚠CD504	BZ614196	121B164101	CORD,CAR BATTERY	SI-PC107-67
CD601	BZ614272	067U012039	WIRE HOLDER	B2013H02-12P
CD601	BZ614372	WKL6028038	FLAT CABLE AWM2468 A	WG26 12C BLACK 280MM
CD602	BZ614364	06CL013002	CORD,CONNECTOR	CL013002
CD603	BZ614282	06CH01423A	CORD,CONNECTOR	CH01423A
CD604	BZ614264	06CH01429A	CORD,EIS CONNECTOR	CH01429A
CD801	BZ614175	06CU82039A	CORD,CONNECTOR	SM1098-009-1A
CD803	BZ614369	WDL6017038	FLAT CABLE AWM2468 A	WG26 6C BLACK 170MM
CD810	BZ614332	067U011029	WIRE HOLDER	B2013H02-11P
CD810	BZ614370	WJL6835038	FLAT CABLE AWM2468 A	WG26 11C GRAY 350MM
CD850	BZ614276	067U005049	WIRE HOLDER	B2013H02-5P
CD850	BZ614371	WCL6834038	FLAT CABLE AWM2468 A	WG26 5C GRAY 340MM
CF601	BZ613030	1022045R72	FILTER,SAW	SAFGP45M7VFYZR0B or
	BZ613014	1022T45R72	FILTER,SAW	SAF45MFY220ZR
CF603	BZ613015	1011T4R504	FILTER,CERAMIC	EFCT4R5YS5A
CF604	BZ613016	1011T4R517	FILTER,CERAMIC	EFCT4R5MW5
CP353	BZ614365	069S120419	CONNECTOR PCB SIDE	A2502WV2-2P
CP401	BZ614154	069X440029	CONNECTOR PCB SIDE	B04B-DVS
CP402	BZ614016	069W01001A	CONNECTOR PCB SIDE	003P-2100
⚠CP403	BZ614283	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		MISCELLANEOUS		
CP502	BZ614250	069R2B0589	CONNECTOR PCB SIDE	52147-1110
CP503	BZ614137	069X620030	CONNECTOR PCB SIDE	RE-H022TD-1130
CP602	BZ614039	069E270129	CONNECTOR PCB SIDE	8283_0712_00_000
CP801	BZ614269	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP820	BZ614251	069R2C0589	CONNECTOR PCB SIDE	52147-1210
CP850	BZ614212	069R250589	CONNECTOR PCB SIDE	52147-0510
CP1001	BZ614156	069R220021	CONNECTOR PCB SIDE	52287-0211
CP1002	BZ614289	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2
CP4001	BZ614054	0697240600	CONNECTOR PCB SIDE	TOC-C04X-B1
CP4002	BZ614050	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-06Z14
CP4003	BZ614009	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1
CP803A	BZ614333	067U006049	WIRE HOLDER	B2013H02-6P
CP803B	BZ614366	069R260589	CONNECTOR PCB SIDE	52147-0610
CUS011	BZ710279	800WFAA006	CUSHION A	
CUS013	BZ710149	800WFAA008	CUSHION C	
⚠DY801	BZ310088	0271080901	DY	KDY3CFB23M
EL001	BZ614043	124116281A	EYE LET	XRY16X28BD
EL002	BZ614044	124120301A	EYE LET	XRY20X30BD
⚠F501	BZ614177	081PC05004	FUSE	51MS050LCC
⚠FB401	BZ310168	043210013F	TRANSFORMER,FLYBACK	3210013F
FH501	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
⚠ICP502	BZ614169	083PC10002	MICRO FUSE	251010
OS4201	BZ614199	077Q004017	REMOTE RECEIVER	PIC-37243SR
⚠RY503	BZ612011	0560V10118	RELAY	ALKS325
⚠SP351	BZ614367	070C732002	SPEAKER	SG08G26BNB
TM101	BZ614319	076D0DQ050	TRANSMITTER	TOT201N06010
⚠TU601	BZ610125	0145K00055	TUNER,VHF-UHF	TECC1040PG32D
⚠V801	BZ614161	09D1090401	CRT W/O DY	A22JWG098X
X602	BZ613004	100CT3R505	CRYSTAL	HC-49/C
X1001	BZ613002	100CT01207	CRYSTAL	HC-49/U-S
X1002	BZ613006	100DA32R01	CRYSTAL	DT-26
X4001	BZ613023	100CT3R508	CRYSTAL	HC-49/U

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

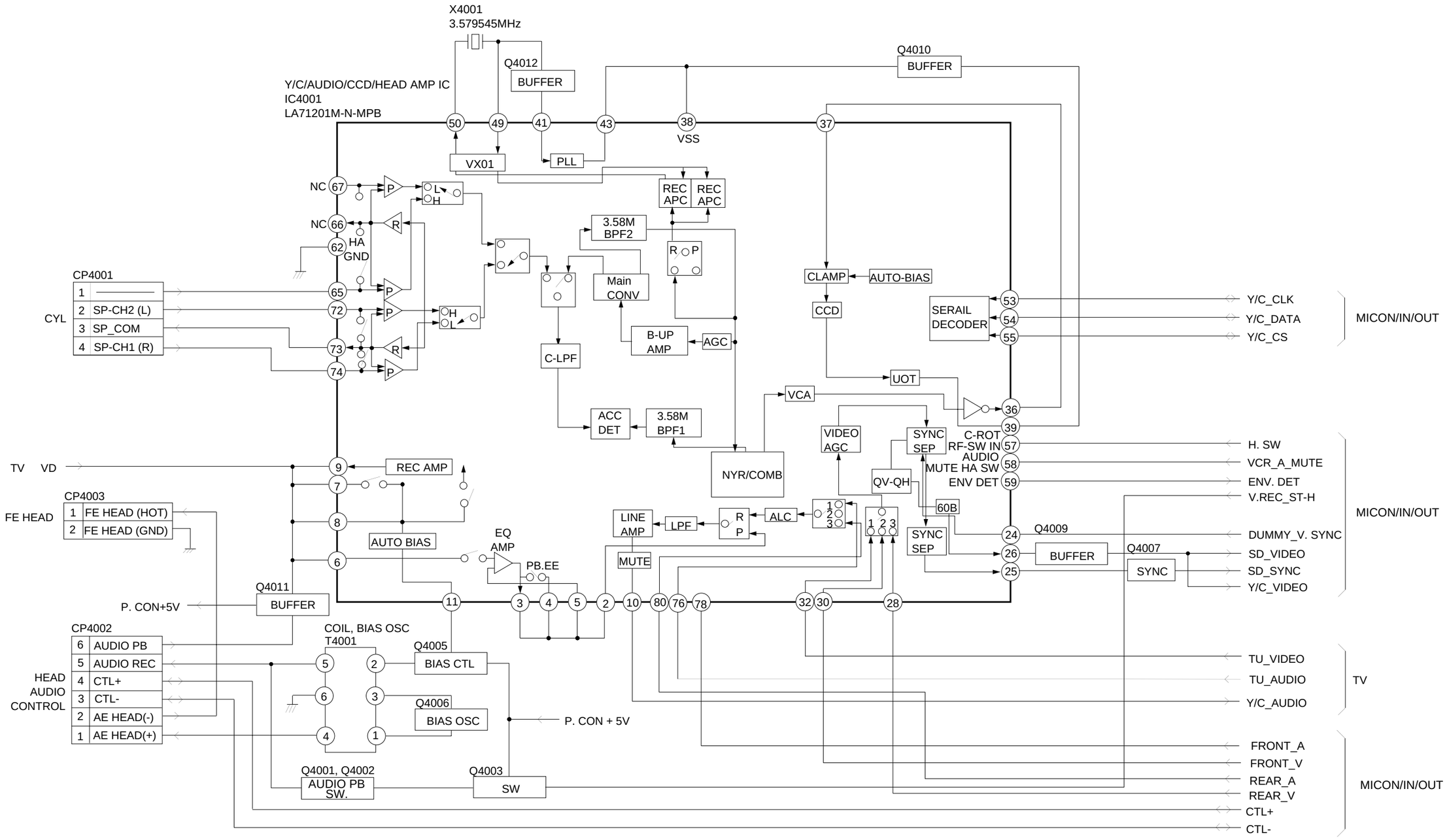
TV BLOCK DIAGRAM

5.7VREF
AT+13V
Y/C/AUDIO/CCD/ HEAD AMP
TU_AUDIO
TU_VIDEO
Y/C_AUDIO
Q601
BUFFER
8.7VREF
5.7VREF(P.C0N)
CHROMA IC
IC601 M61206FP
V. OUTPUT IC
IC401 AN5522
THERMAL PROTECTION
PUMP UP
Q405
H-DRIVE
Q406
H. OUTPUT
DY
FB401
J801
V801
CRT
TU601
SAW FILTER
CF601
J352
HEAD PHONE
SP351
SPEAKER
J351
HEAD PHONE
SOUND AMP IC
IC351 AN7511
RF AGC OUT
VIF IN
VIF IN
AFT OUT
ACL/ABCL
EXT AUDIO IN
VIF APC FILTER
VIF VIDEO OUT
VREG VCC
5.7V REG OUT(FOR CPU)
7.8V REG OUT
5V REG
SW REG CONT
POWER ON CONT
FM DIRECT OUT
AUDIO OUT
SDA
SCL
FAST BLK
R OUT
G OUT
B OUT
V OUT
V PULSE OUT
V RAMP FEEDBACK
V. POSI ADJ
VR402
Q804
RED AMP
Q805
GREEN AMP
Q806
BLUE AMP
X'TAL
H.PLUSE OUT
FBP IN
H OUT
X602
3.579545MHz
MICON/REGULATOR /IN/OUT
TV_POWER-H
J503
DC JACK
Q501
DC POWER SW.
11.3V REG. OPE AMP IC
IC504 NJM2368D
Q509, Q512
REG DRIVE
Q505
SW.
T502
Q508
PROTECTOR
Q518
PROTECTOR
AC IN
F501
L501
D503, D504, D535, D536
RECTIFIER
T501
RY503
RELAY
L508
DEGAUSS COIL
Q402
DEGAUSS DRIVER
Q401
DEGAUSS SW.
Q507
FEED BACK SW.
Q510
SWITCHING
Q502
SWITCHING
Q511
DC POWER SW.
Q514
PROTECTOR/ AC, DC SW.
Q504
PROTECTOR
IC506
LTV-817M-VB
FEED BACK
AC+B ADJ
VR502
DC+B ADJ
VR501
REG
Q3001, Q3002
Q3007
REG
REG
Q3005, Q3006
5V REG
P.CON 5V SW IC
IC3002
KIA78R05PI
P.CON+13V
P.CON+8V
P.CON+5V
P.CON+5V
Q407, Q404
SW
Q408
X-RAY-SW
X-RAY-STOP
VD
AFT_M
OSD_BLK
OSD_B
OSD_G
OSD_R
HD
VCR_POWER-H
X-RAY_TEST
MICON /IN/OUT
VD
Y/C/AUDIO/CCD/ HEAD AMP

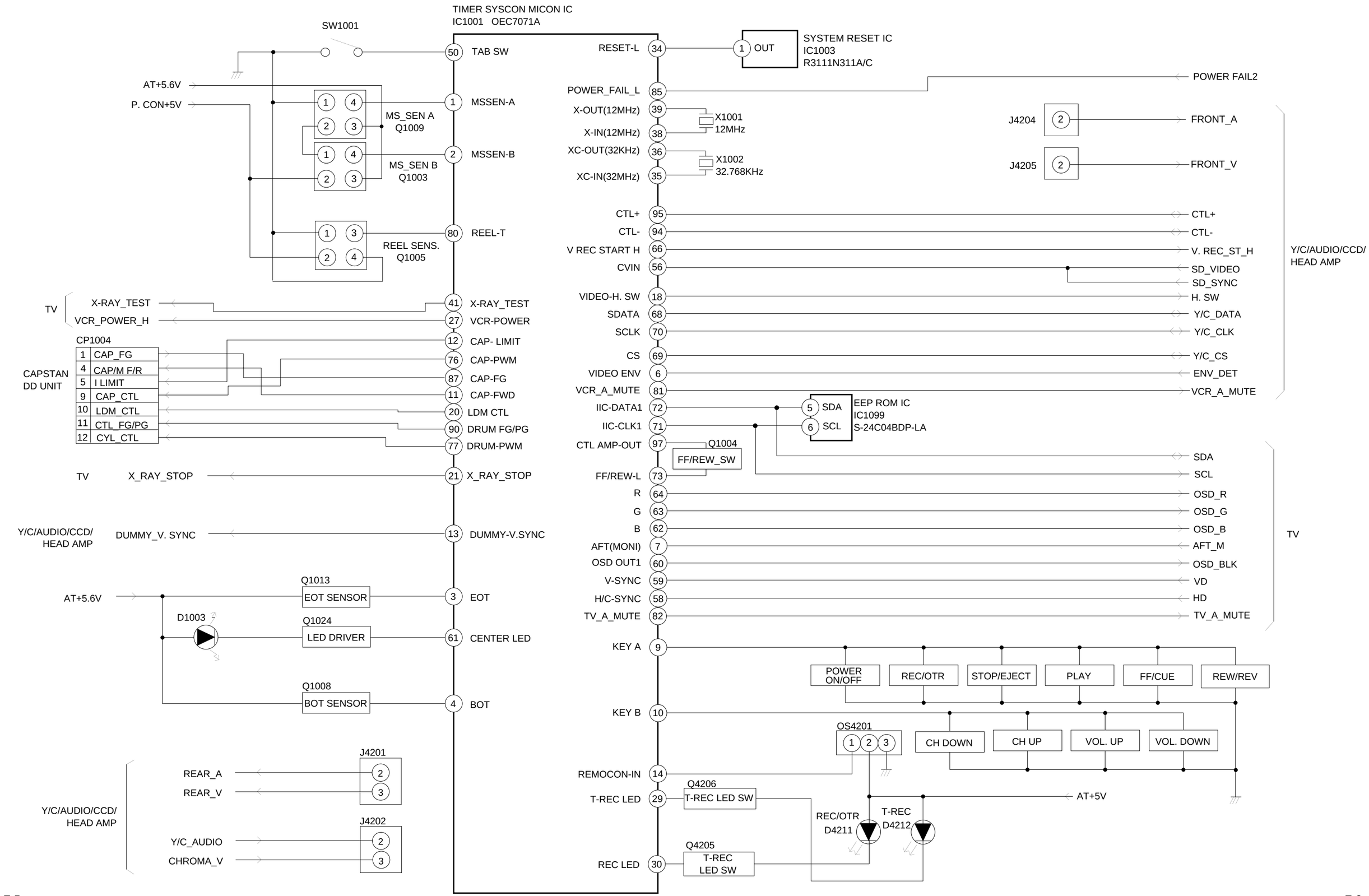
E-1

E-2

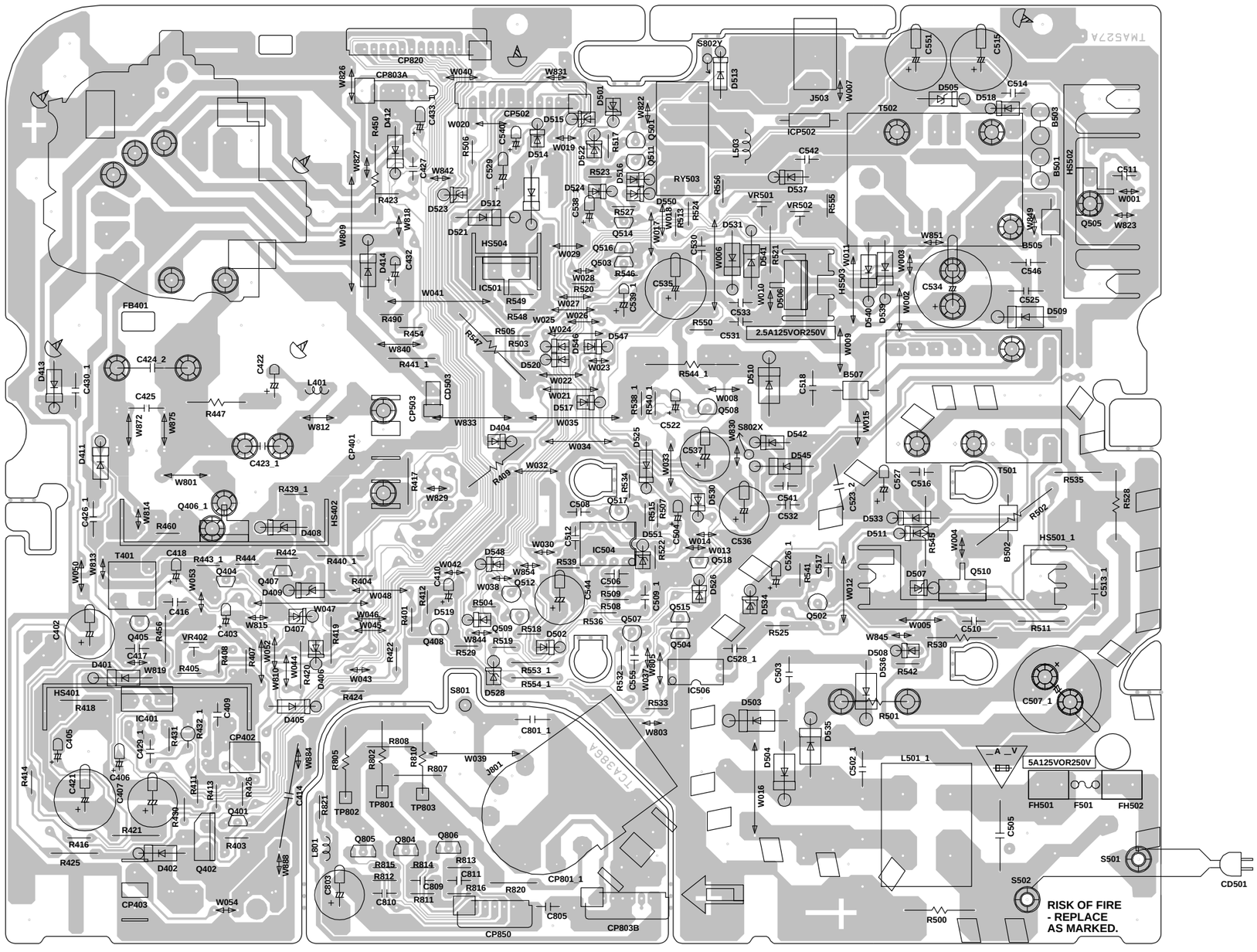
Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



MICON/IN/OUT BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
MAIN/CRT
SOLDER SIDE


TMA527A
TCA386A
CP820
CP803A
W826
W040
W831
S802Y
D513
J503
W007
T502
ICP502
C551
C515
D505
D518
C514
B503
B501
HS502
C511
W001
Q505
W823
W849
B505
W851
C546
C525
D509
C534
C542
D537
VR501
VR502
R555
R556
RY503
L503
W822
Q501
Q511
D501
CP502
D515
D514
D522
R517
W019
W020
C540
R506
C529
D516
R523
D524
C538
D550
W018
R513
R524
D531
C530
W006
D541
R523
W017
W011
HS503
D540
D538
W003
W002
C535
C533
W010
D506
R550
C531
2.5A125VOR250V
W009
B507
D510
C518
R544_1
W008
Q508
R538_1
R540_1
C522
D525
W033
W830
S802X
D542
D545
C537
C536
C541
C532
W015
C523_2
C527
C516
T501
R535
R528
R502
D533
D511
R545
W004
B502
HS501_1
Q510
D507
D526
D534
C526_1
R541
C517
W012
Q502
C513_1
W005
C510
R511
W845
R530
D508
D536
R542
C528_1
R525
C503
R501
C507_1
D503
D535
IC506
W803
R533
W037
W035
W034
W032
R409
D404
W833
W812
CD503
CP503
CP401
R417
W829
R534
C508
Q517
R525
R507
C504_1
W014
W013
Q518
C512
IC504
D548
W030
W042
W854
Q512
W038
R539
C506
R509
R508
R536
Q507
C509_1
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Q504
C544
C410
R412
D519
R504
Q509
R518
R519
D502
W844
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R529
R553_1
R554_1
D528
S801
C801_1
W039
J801
R808
R802
R810
R807
TP801
TP803
TP802
R805
R821
L801
Q805
Q804
Q806
R815
R814
R813
R812
C811
C809
R816
R820
R811
C810
C803
CP801_1
CP850
C805
CP803B
W054
CP403
W888
W884
C414
R426
R413
R411
R409
Q401
R421
R416
R425
D402
Q402
R403
C421
C406
C407
C405
R414
C429_1
R431
R432_1
C409
IC401
HS401
R418
D401
W819
C417
R405
R408
R407
W052
W044
W810
R420
D406
W043
R424
D405
CP402
C402
Q405
R456
VR402
C403
W815
D407
W047
W046
W045
R419
R401
R422
Q407
D409
W048
R404
R440_1
W842
C427
D412
R450
C433
W827
R423
C418
R443_1
R444
R442
Q404
W053
C416
T401
W050
W813
W814
R460
Q406_1
D408
HS402
C426_1
D411
W801
C423_1
W872
W875
R447
C425
C424_2
C422
L401
W812
D413
C430_1
FB401
R490
R454
W840
R441_1
R547
R505
R503
D547
D546
D520
W023
W022
W021
D517
R548
W025
W026
W024
R549
W027
R520
W028
W041
IC501
HS504
W029
Q516
Q503
R546
C539_1
D512
D523
D521
W809
W818
D414
C432
R527
Q514
W817
R523
D524
D516
Q511
W822
Q501
D501
CP502
D515
D514
D522
R517
W019
W020
C540
R506
C529
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C427
D412
R450
C433
W827
R423
W826
CP820
CP803A
W040
W831
S802Y
D513
J503
W007
T502
ICP502
C551
C515
D505
D518
C514
B503
B501
HS502
C511
W001
Q505
W823
W849
B505
W851
C546
C525
D509
C534
C542
D537
VR501
VR502
R555
R556
RY503
L503
W822
Q501
Q511
D501
CP502
D515
D514
D522
R517
W019
W020
C540
R506
C529
D516
R523
D524
C538
D550
W018
R513
R524
D531
C530
W006
D541
R523
W017
W011
HS503
D540
D538
W003
W002
C535
C533
W010
D506
R550
C531
2.5A125VOR250V
W009
B507
D510
C518
R544_1
W008
Q508
R538_1
R540_1
C522
D525
W033
W830
S802X
D542
D545
C537
C536
C541
C532
W015
C523_2
C527
C516
T501
R535
R528
R502
D533
D511
R545
W004
B502
HS501_1
Q510
D507
D526
D534
C526_1
R541
C517
W012
Q502
C513_1
W005
C510
R511
W845
R530
D508
D536
R542
C528_1
R525
C503
R501
C507_1
D503
D535
IC506
W803
R533
W037
W035
W034
W032
R409
D404
W833
W812
CD503
CP503
CP401
R417
W829
R534
C508
Q517
R525
R507
C504_1
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W013
Q518
C512
IC504
D548
W030
W042
W854
Q512
W038
R539
C506
R509
R508
R536
Q507
C509_1
Q515
Q504
C544
C410
R412
D519
R504
Q509
R518
R519
D502
W844
Q408
R529
R553_1
R554_1
D528
S801
C801_1
W039
J801
R808
R802
R810
R807
TP801
TP803
TP802
R805
R821
L801
Q805
Q804
Q806
R815
R814
R813
R812
C811
C809
R816
R820
R811
C810
C803
CP801_1
CP850
C805
CP803B
W054
CP403
W888
W884
C414
R426
R413
R411
R409
Q401
R421
R416
R425
D402
Q402
R403
C421
C406
C407
C405
R414
C429_1
R431
R432_1
C409
IC401
HS401
R418
D401
W819
C417
R405
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D405
CP402
C402
Q405
R456
VR402
C403
W815
D407
W047
W046
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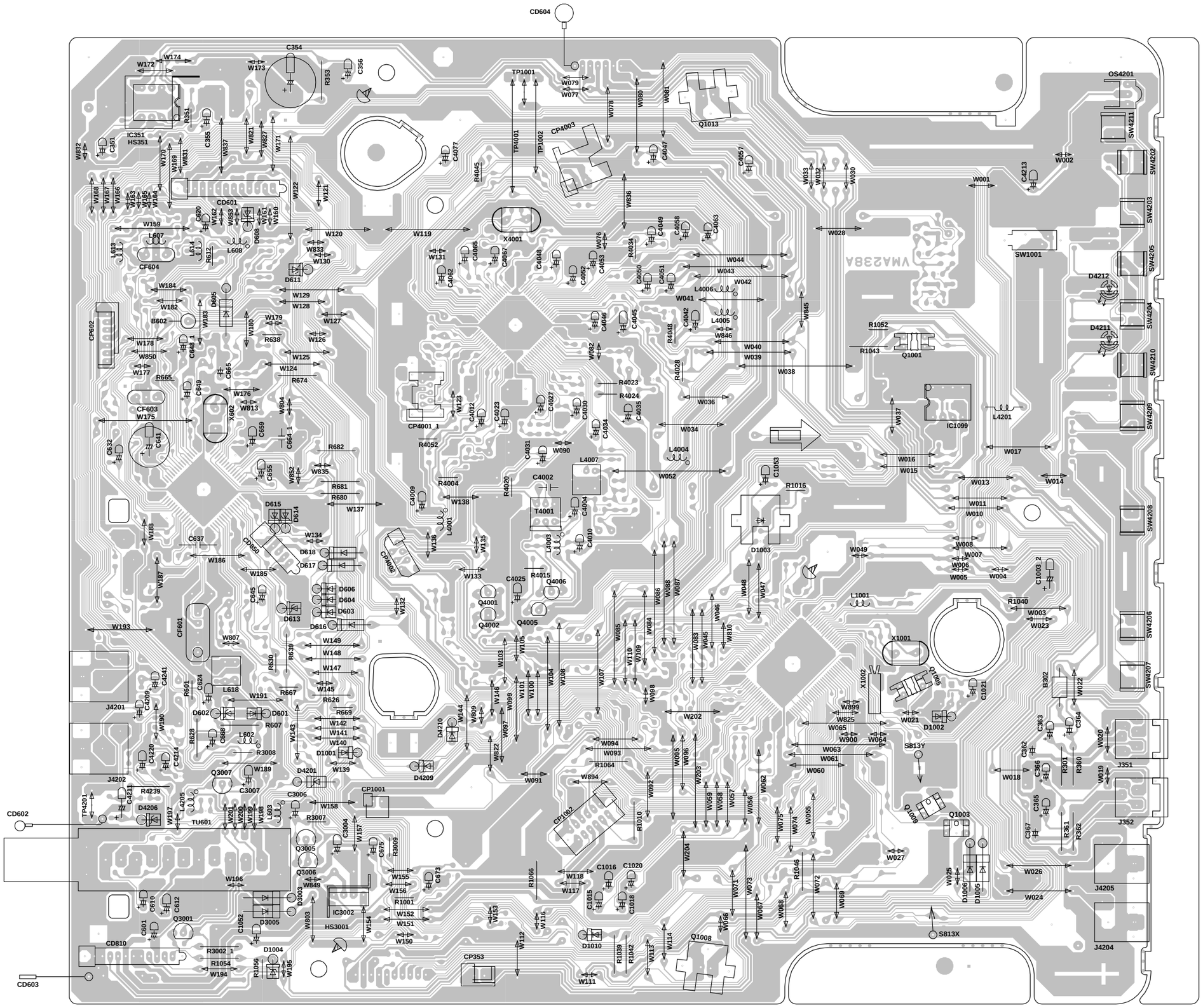
R404
R440_1

PRINTED CIRCUIT BOARDS
SYSCON (INSERTED PARTS)
SOLDER SIDE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W172
W173
R353
C356
TP1001
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W077
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SW4202
SW4203
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SW4204
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SW4208
SW4206
SW4207
W002
W001
C4213
SW1001
D4212
D4211
R1052
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W013
W011
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W016
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W032
W033
W031
W076
W078
W036
W034
W052
L4004
L4007
C1053
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D1003
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W008
W007
W006
W005
W004
C1003_2
L1001
R1040
W003
W023
X1001
Q1005
C1021
X1002
B302
W022
W899
W825
W065
W900
W064
W063
W061
W060
W021
D1002
S813Y
C363
C364
C382
C366
R301
R360
W020
W019
W018
J351
J352
C365
C367
R361
R362
Q1009
Q1003
W027
W025
D1005
D1006
W026
W024
J4205
J4204
S813X
W018
W894
CP1002
R1066
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C1020
C1015
C1018
W118
W117
R1046
W072
W089
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W068
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W065
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W074
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W202
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W058
W059
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D1010
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R1042
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W114
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CP353
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W116
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W155
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W151
W152
R1001
W150
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R3009
C3004
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C3006
W158
R3007
Q3005
Q3006
W849
D3003
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HS3001
D3005
C1052
W803
W196
C610
C612
Q3001
C601
CD810
R3002_1
R1054
W194
R1056
W195
D1004
CD603
CD602
TP4201
C4211
D4206
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L4205
TU601
W201
W200
W199
W198
L603
Q3007
C3007
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C4214
C4220
J4202
R4239
C4213
W190
C4209
R601
C624
C4241
J4201
D602
D601
R607
L602
R3008
L618
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R667
R626
R669
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W140
D1001
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D4209
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C689
R630
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C645
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W165
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C4048
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C4050
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C4063
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W043
W042
L4006
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L4005
C4042
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W039
W038
R4028
W082
R4034
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C4047
C4077
R4045
TP4001
TP1002
CP4003
CP4001_1
R4052
W123
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C4023
C4027
C4030
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C4031
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R4023
R4024
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R4020
C4002
T4001
C4004
L4003
C4010
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W136
W133
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Q4001
Q4002
Q4005
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W104
W108
W107
W085
W109
W110
W098
W084
W086
W088
W087
W046
W083
W045
W810
W048
W047
W202
W809
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W072
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W024
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W025
D1005
D1006
W018
W894
CP1002
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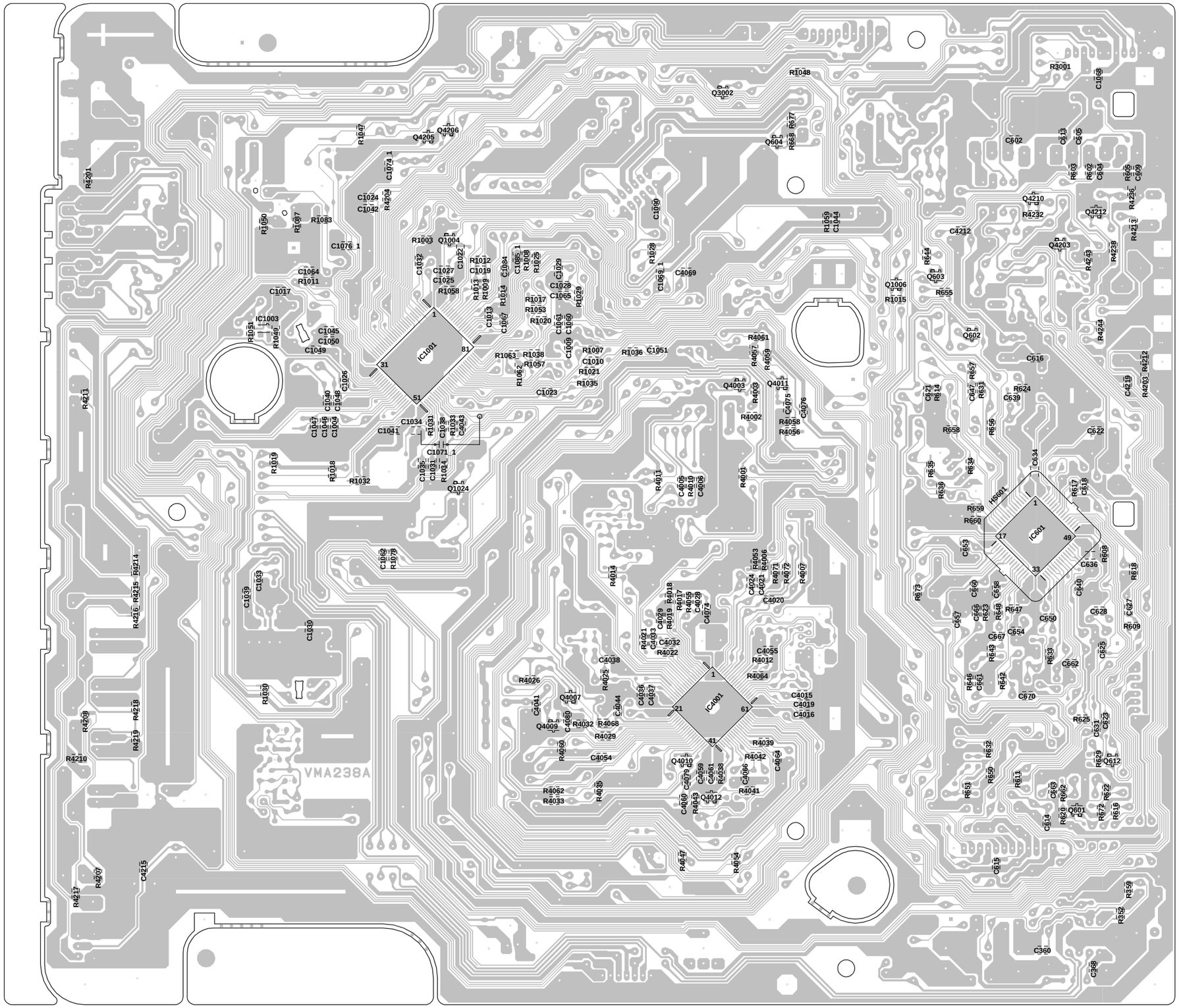
C1018
W118
W117

PRINTED CIRCUIT BOARDS
SYSCON (CHIP MOUNTED PARTS)
SOLDER SIDE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IC4001
IC601
HS601
VMA238A
R1048
Q3002
R3001
C1066
R1047
Q4205
Q4206
C1071_1
R4201
C1024
C1042
R4204
R1050
R1067
R1083
C1076_1
C1064
R1011
C1017
R1003
Q1004
C1032
C1027
C1025
R1058
C1022
R1012
C1019
R1013
R1009
C1084
C1085_1
R1008
R1029
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C1028
C1065
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R1021
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R1038
R1057
R1062
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R1028
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R1059
C1044
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R4238
R4243
R644
Q603
R655
Q1006
R1015
Q602
R4214
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R4203
R4212
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R657
R653
C647
C621
R614
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R656
C622
R4058
R4056
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R4003
Q4011
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C4071
R4056
C4072
R4057
C4073
R4058
C4074
R4059
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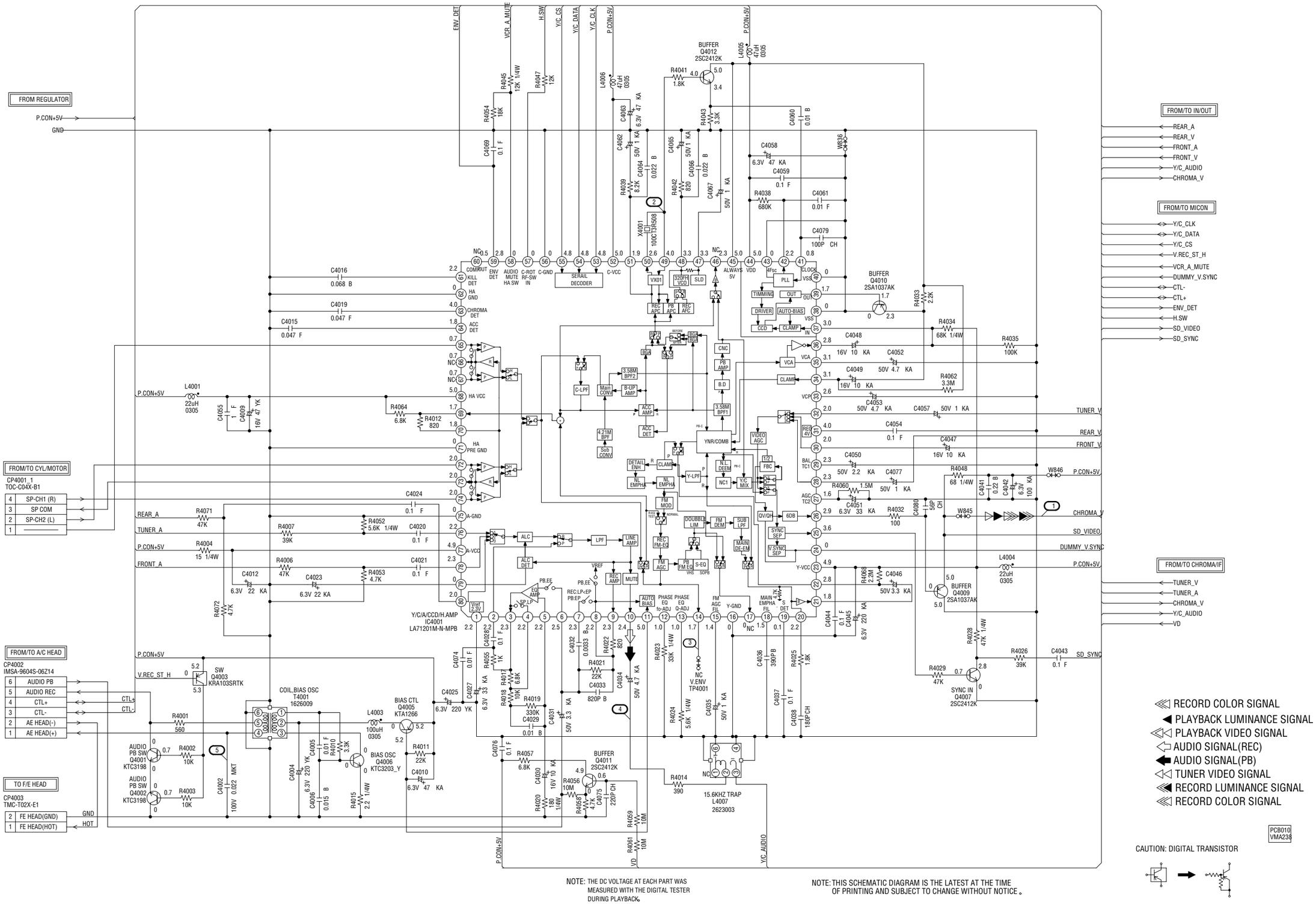
C4077
R4062
C4078
R4063
C4079
R4064
C4080
R4065
C4081
R4066
C4082
R4067
C4083
R4068
C4084

Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM

(SYSCON PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

MICON SCHEMATIC DIAGRAM
(SYSCON PCB)

FROM/TO REGULATOR

AT+5.6V
GND
MOTOR_GND
P.CON+5V
AT+12V
X-RAY_STOP
POWER_FAIL[DC]

D1006 SB140-EIC
D1005 SB140-EIC
AT+5V
R1015 10K
POWER_FAIL
POWER FALL Q1006 2SA1037AK
R1056 10K 1/4W
D1004 MTZJ5.6C
POWER_FAIL[DC]
R1054 5.6K 1/4W
D1001 1SS133
R1025 4.7K
C1067 0.1 F
W810

C1028 0.1 F
C1065 0.1 F
REEL_T
REEL_S
R1028 22K
CAP_CTL
R1029 4.7K
CYL_DRIVE
C1029 0.0068 B
R1053 220
R1017 39K
R1020 22K
C1061 100P CH
SDA
SCL
Y/C_CLK
Y/C_CS
Y/C_DATA
C1060 100P CH
H_CTL
V.REC_ST_H
R1062 3.3K
R1038 100
R1057 100
R1063 3.3K
OSD_R
OSD_G
OSD_B
CENT_LED
OSD_BLK
C1071_1 680P B
R1007 680
R1021 680
R1035 680
R1036 3.3K
C1051 220P CH
C1009 100P CH
C1010 100P CH
C1023 100P CH
C1041 0.1 F
C1034 0.1 F
C1035 220P CH
R1031 1K
R1032 4.7K
SERVICE TP1001 NC
SD_SYNC
C1031 0.001 B
R1033 1K
C1062 1 B
R1078 390K
C1038 680P CH
R1034 560K
TAB_SW

NC
80 0.9 POWER_FAIL_L
79 0.9 REEL-T
78 0 REEL-S
77 1.8 CAP-FULL
76 2.5 DRUM-PWM
75 0 CAP-PWM
74 4.9 75 VOLUME
73 2.5 74 JUST CLOCK
72 2.6 73 FF/REW-L
71 0 72 IIC-DATA1
70 0 71 IIC-CLK1
69 0 70 SCLK
68 4.7 69 CS
67 NC 68 SDATA
66 NC 67 NC
65 NC 66 V.REC START H
64 NC 65 NC
63 0 64 R
62 0 63 G
61 4.8 62 B
60 0 61 CENTER LED
59 4.9 60 OSD OUT1
58 4.2 59 V-SYNC
57 0 58 HIC-SYNC
56 2.3 57 NUA
55 1.6 56 CVIN
54 2.1 55 VHOLD
53 5.2 54 HLF
52 0 53 OSD-VCC
51 5.2 52 SD-IN(MONI)
50 5.2 SERVICE

VCR_A_MUTE
TV_A_MUTE
EXT_A_MUTE
SDA
SCL
IIC_OFF
CAP_FG
CYL_FG/PG
CTL-
CTL+
FF/REW_SW
EOT
BOT
CENT_LED
TAB_SW

R1001 3.3K 1/4W
R1008 1K
R1014 47K
R1064 1K 1/4W
C1085_1 100P CH
C1084 0.0022 B
C1015 6.3V 47 KA
C1016 16V 22 KA
C1018 50V 4.7 KA
R1009 560
R1012 10K
C1019 0.001 CH
R1013 560
C1020
C1027 0.0039 B
C1022 0.1 F
Q1004 KRC103SRTK
R1058 560K
R1059 150K
C1025 0.1 F
TIMER SYSCON MICON IC IC1001 OEC7071A
R1010 3.3K 1/4W
W894
W899
W900
H.SW TP1002 NC
C1024 0.01 F
C1042 0.01 F
D1010 1SS133
H_CTL
PROTECT
EXT_MUTE
VCR_POWER_H
TV_POWER_H
T-REC_LED
REC_LED
X-RAY_STOP
LDM_CTL
CAP_F/R
CAP_LIMIT
DUMMY_V.SYNC
REMOCON_IN
MS_SEN-A
MS_SEN-B
C1074_1 0.1 F
ENV_DET
AFT_M
KEY_A
KEY_B
C1076_1 0.01 F
W825
H.SW
S813X
REEL_S
REEL_T
R1046 4.7K 1/4W
R1047 4.7K
C1069_1 100P CH
RESET
R1048 4.7K
R1039 4.7K 1/4W
R1042 4.7K 1/4W

81 VCR_A_MUTE
82 TV_A_MUTE
83 SP/LP/EP-H
84 CA/MA_SEL
98 AMP-VCC
99 ANALOG VCC
100 DEW
50 TAB SW
49 OSD-VSS
48 CM_ADV_AUDIO/AV2
33 E/V_MASK/PLAY LED
32 RENT_H
31 ON-TIMER LED

CM_ADV_VIDEO/AV1 47 NC
NUB 46 0
OSC-OUT2 45 2.6
OSC-IN2 44 2.5
CLKSEL 43 5.2
TUNER_CONTROL 42 NC
X-RAY_TEST 41 0
VSS 40 0
X-OUT(12MHz) 39 2.6
X-IN(12MHz) 38 2.1
VCC 37 5.2
XC_OUT(32KHz) 36 1.3
XC_IN(32KHz) 35 1.5
RESET-L 34 5.2
33 NC
32 4.8
31 NC

C1004 10P CH
C1046 10P CH
L1001 2.2uH
R1040 33K 1/4W
C1047 18P CH
C1026 0.01 F
X-RAY_TEST
C1040 18P CH
X1001 100CT01207
C1048 18P CH
C1049 22P CH
X1002 100DA32R0
C1045 10P CH
C1050 10P CH
RESET
S813Y

FROM/TO Y/C/A/CCD/HEAD AMP
Y/C_CLK
Y/C_DATA
Y/C_CS
H.SW
SD_VIDEO
ENV_DET
VCR_A_MUTE
CTL+
CTL-
DUMMY_V.SYNC
V.REC_ST_H
SD_SYNC

FROM/TO CHROMA /IF
HD
VD
AFT_M
SCL
SDA
OSD_R
OSD_G
OSD_B
OSD_BLK
POWER_FAIL
X-RAY_TEST
VCR_POWER_H
TV_POWER_H
PROTECT
IIC_OFF
H_CTL

FROM/TO IN/OUT
VCR_A_MUTE
REC_LED
T-REC_LED
KEY_A
KEY_B
REMOCON_IN
EXT_MUTE
EXT_A_MUTE
AT+5V

TO SOUND AMP
TV_POWER_H
TV_A_MUTE

EEP ROM IC IC1099 S-24C04BDP-LA
SDA SCL TEST VCC VSS A2 A1 A0
C1030 0.1 F
C1033 100P CH
C1039 100P CH
C1053 6.3V 100 KA

EOT SENSOR Q1013 ST-304L
D1003 LNA2702L010R
BOT SENSOR Q1008 ST-304L
LED DRIVER Q1024 KRC103SRTK
R1016 270 1/4W
R1011 330K
C1064 0.001 B
R1003 330K
C1032 0.001 B
SW1001 MXS01380MPP0
R1018 4.7K

FROM DEW SENSOR
CP1001 52287-0211
1 DEW-
2 DEW+
C1044 0.01 F

FROM/TO CAP MOTOR
CP1002 TMC-J12P-B2
1 CAP FG
2 CAP VCO
3 VCC(5V)
4 CAP.M F/R
5 I LIMIT
6 MOTOR GND
7 GND
8 CYL/LAD VCO
9 CAP CTL
10 LDM CTL
11 CYL FG/PG
12 CYL CTL
C1052 16V 47 YK
C1068 0.1 F
C1090 0.0033 B

MS_SEN B Q1003 RPI-352C40N
MS_SEN A Q1009 RPI-352C40N
R1083 33K
R1050 100
R1087 33K
R1043 390 1/4W
R1052 390 1/4W
R1030 47K
R1019 47K
REEL SENS Q1001 RPI-303
REEL SENS Q1005 RPI-303

SYSTEM RESET IC IC1003 R3111N311A/C
NC NC NC NC OUT IN GND
R1049 4.7K
R1051 18K
D1002 1SS133
C1003_2 1000 MHE 6.3V
C1017 0.1 F
C1027 16V 10 KA

TUNER VIDEO SIGNAL
DEFLECTION SIGNAL
CAPSTAN AFC SIGNAL
CYLINDER AFC SIGNAL
CYLINDER APC SIGNAL

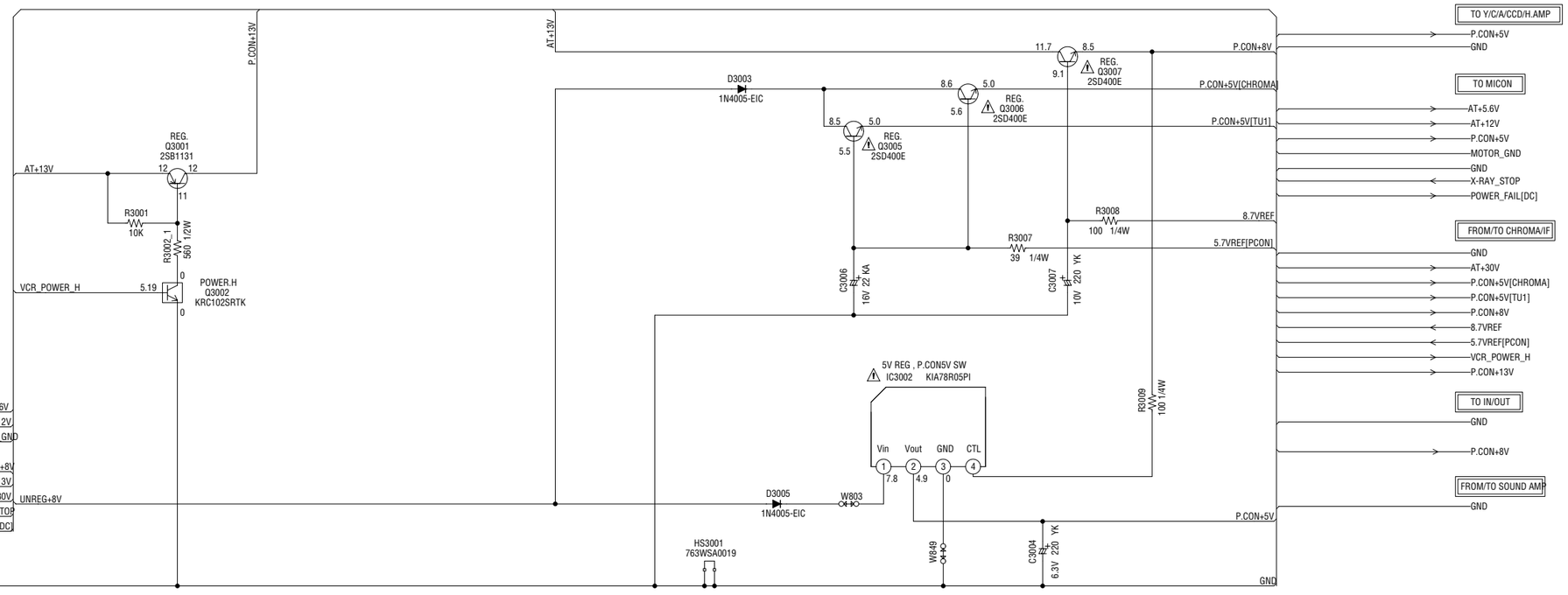
PCB010
VMA238

CAUTION: DIGITAL TRANSISTOR

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

REGULATOR SCHEMATIC DIAGRAM
(SYSCON PCB)



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CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

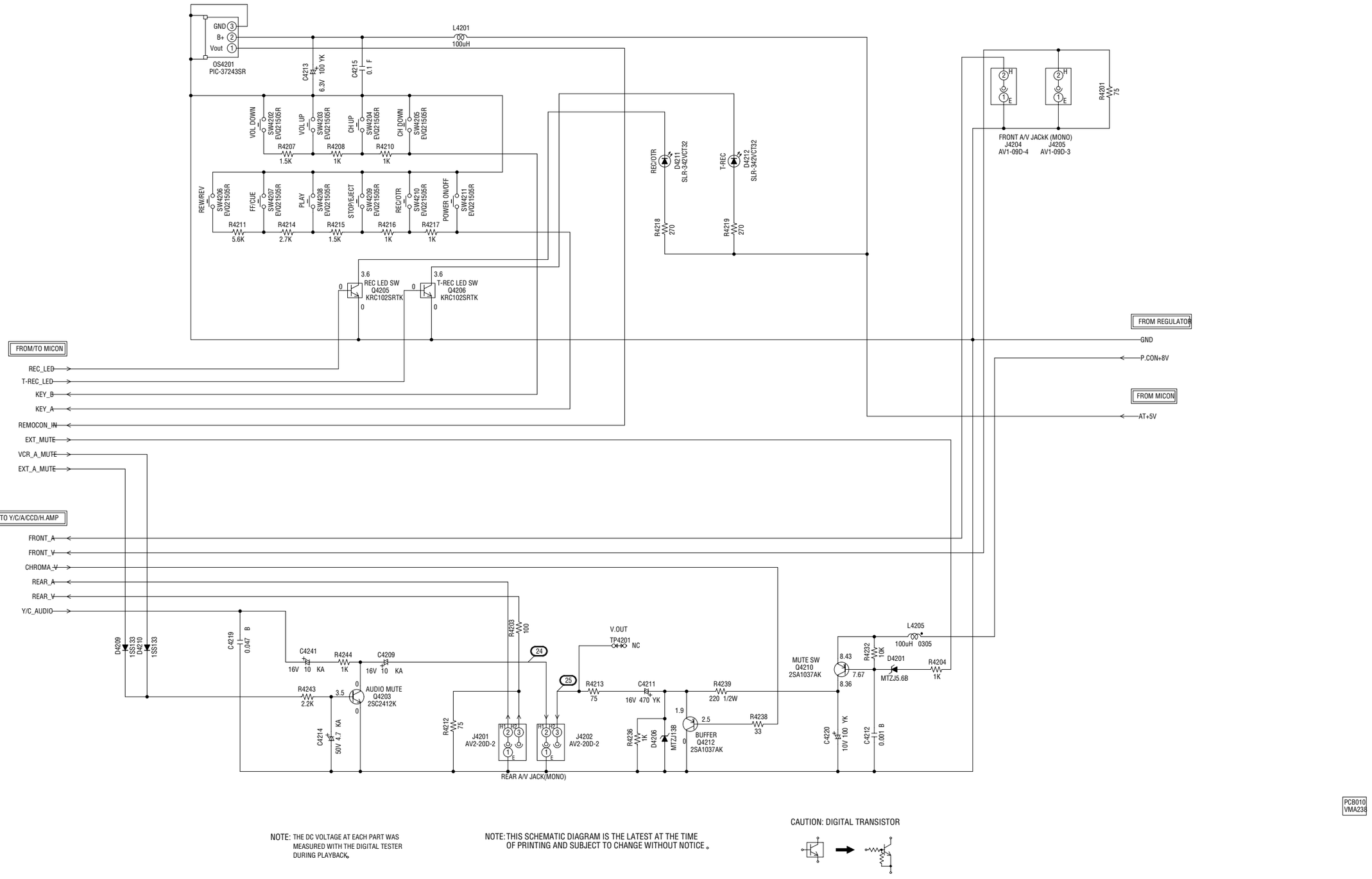
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

PCB010
VMA238

IN/OUT SCHEMATIC DIAGRAM

(SYSCON PCB)



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CAUTION: DIGITAL TRANSISTOR

CHROMA/IF SCHEMATIC DIAGRAM (SYSCON PCB)

FROM/TO MICON

PROTECT
POWER_FAIL
VD
OSD_R
OSD_G
OSD_B
OSD_BLK
SDA
SCL
AFT_M
VCR_POWER_H
HD
X-RAY_TEST
TV_POWER_H
H_CTL
IIC_OFF

TEST POINT

CP602
8283_0712_00_000

7	INTELLIGENT MONI
6	B.OUT
5	AGC_M
4	IIC_OFF
3	SDA
2	SCL
1	GND

TUNER_V
B.OUT
AGC_M
AUDIO_OUT
Y/C_AUDIO
TUNER_A
AFT_M
AGC_M

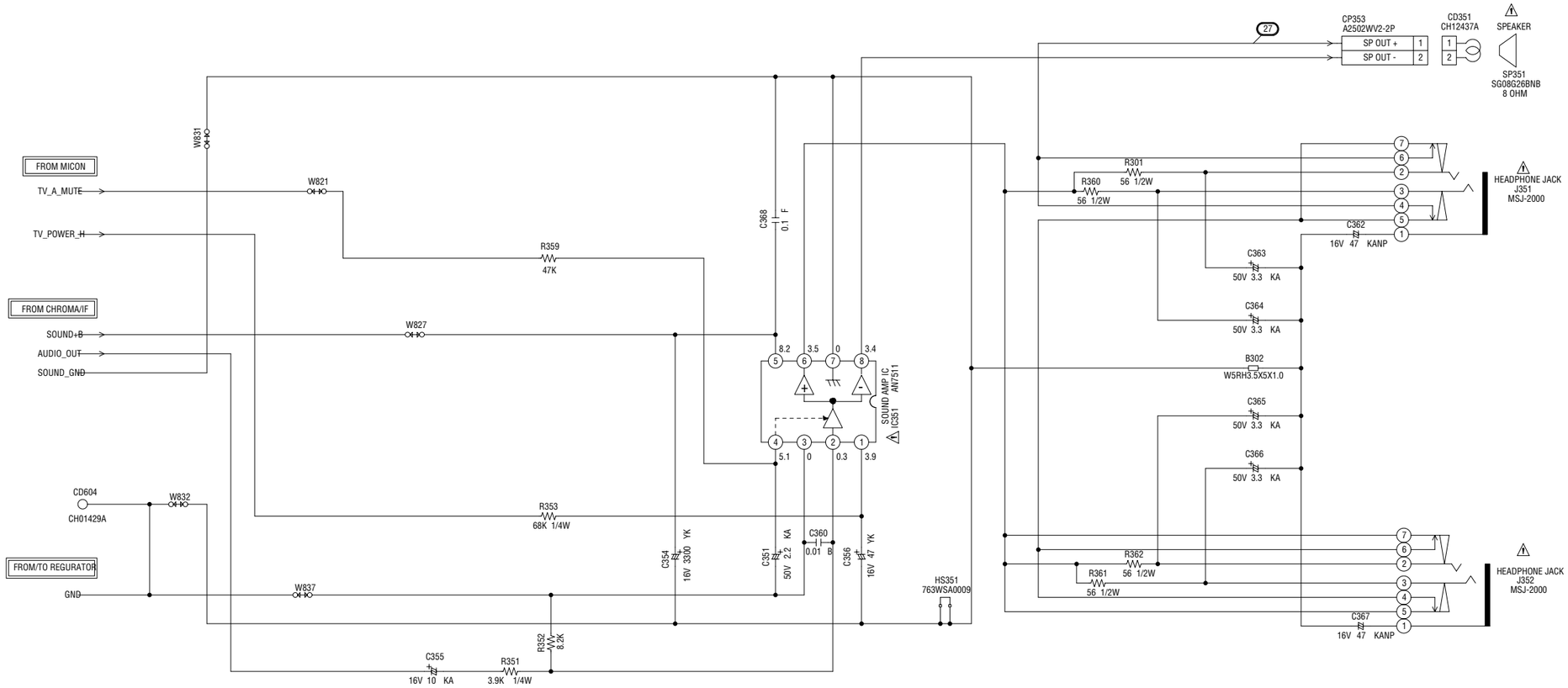
TU601 TECC1040PG32D

AGC	1	1.8
NC	2	
	3	2.5
NC		
SCL	4	2.5
SDA	5	2.5
NC	6	
+5V	7	4.9
NC	8	
+30V	9	29.3
NC	10	
IF	11	0

L608 100uH 0305
R616 220
R620 100
R662 1K
C663 390P CH
L614 150uH
CF604 EFCT4R5MW5
L607 22uH
C614 0.01 F
C620 47 6.3V KA
BUFFER Q601 2SA1037AK
CF603 EFCT4R5YS5A
C628 0.01 B
R622 220
R623 470
C636 0.01 F
C640 0.1 B
C641 10V 1000 YK
C670 0.01 B
R625 10K
C662 0.01 B
R665 1.5M 1/4W
B602 W4BRH3.5X6X1
C648_1 50V 1 KA
C649 50V 1 KA
R633 8.2K
C650 0.015 B
C654 18P CH
W850
X602 100CT3R505
R608 10K
L613 3.3uH
R612 5.6K 1/4W
R611 10K
C625 0.022 B
C631 1 F
C623 0.0047 B
R618 10M
D602 MTZJ8.2B
D601 1SS133
R607 220 1/2W
C624 16V 47 YK
R609 680
C618 330P CH
C668
L602 16V 22 KA
100uH 0305
C632 50V 2.2 KA
C627 1 B
R617 150K
R628 47 1/2W
BUFFER Q612 2SC2412K
R629 390
R632 2.2K
C621 0.01 F
W822
R614 390K
R601 2.2K 1/4W
C622 0.22 B
C634 0.01 F
C637 0.1 F
C616 0.01 B
SAW FILTER CF601 SAFGP45M7VFYZR0B
IN IN G OUTOUT
CHROMA IC IC601 M61206FP
C639 0.01 F
R626 10K 1/4W
R624 2K
D611 MTZJ9.1B
W833
W807
R657 1K
R656 1K
C645 50V 1 KA
C647 0.01 F
R631 6.8K
HS601 763WAA0014 NC
L618 3192001
L603 470uH 0305
CD602 CL013002
C602 0.1 F
L604 W5T18.4X10X9.6
C601 50V 1 KA
C613 0.1 F
C612 6.3V 220 YK
C604 100P CH
C605 100P CH
C609 0.01 B
C610 50V 2.2 KA
R605 22K
R602 220
R603 220

| | | |

SOUND AMP SCHEMATIC DIAGRAM
(SYSCON PCB)



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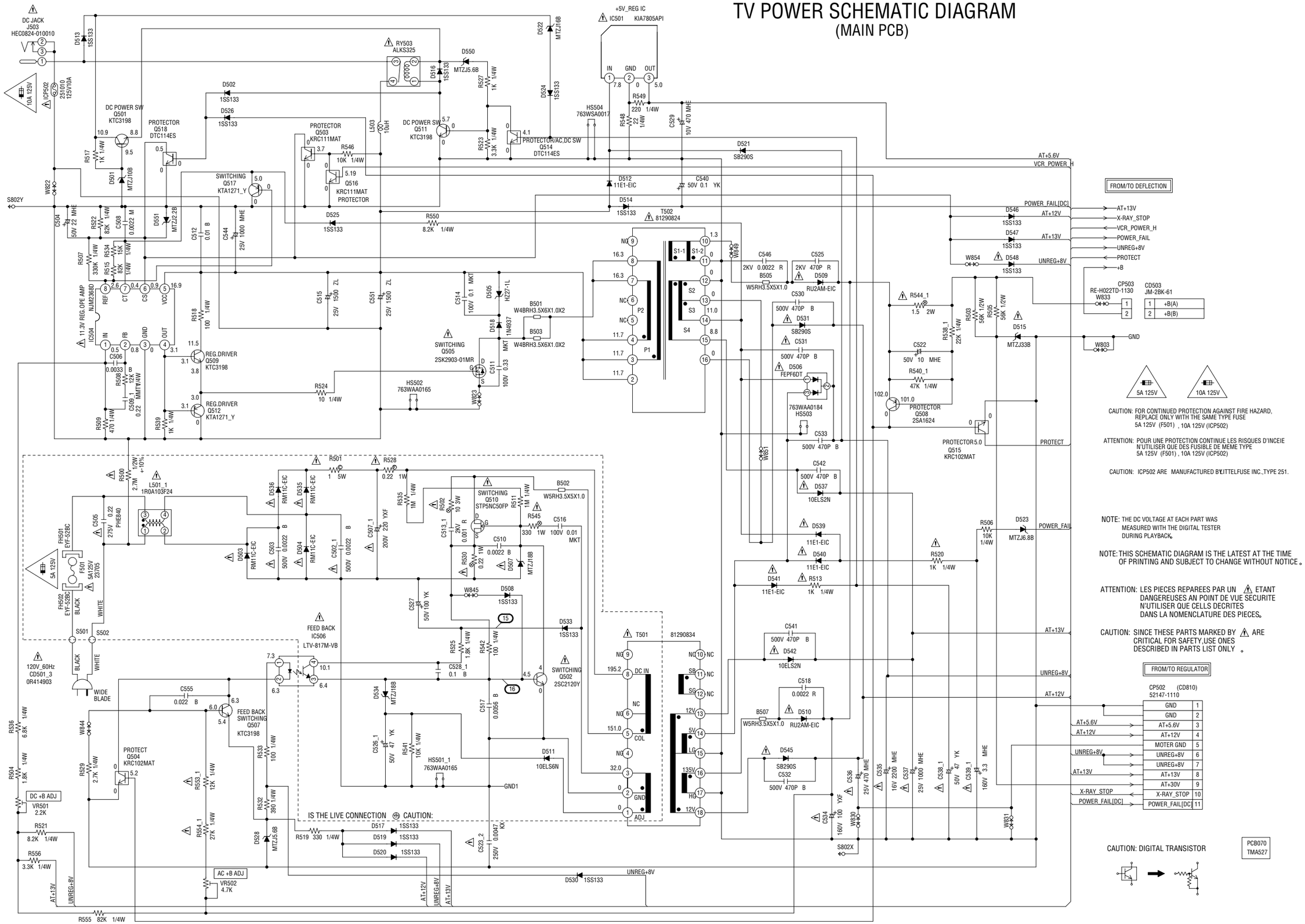
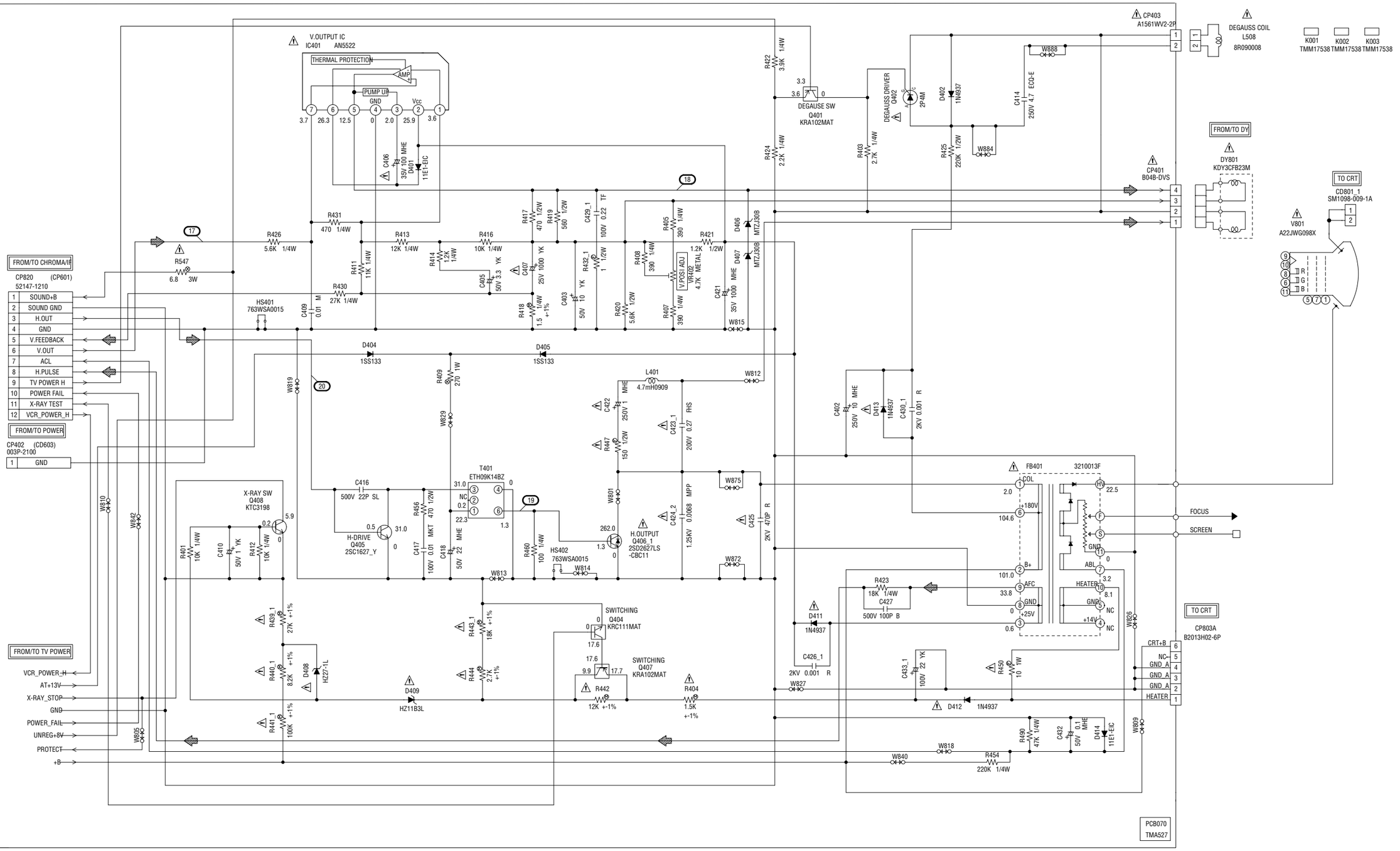
TV POWER SCHEMATIC DIAGRAM
(MAIN PCB)



DEFLECTION SCHEMATIC DIAGRAM

(MAIN PCB)



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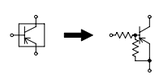
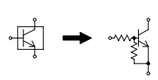
CAUTION: DIGITAL TRANSISTOR



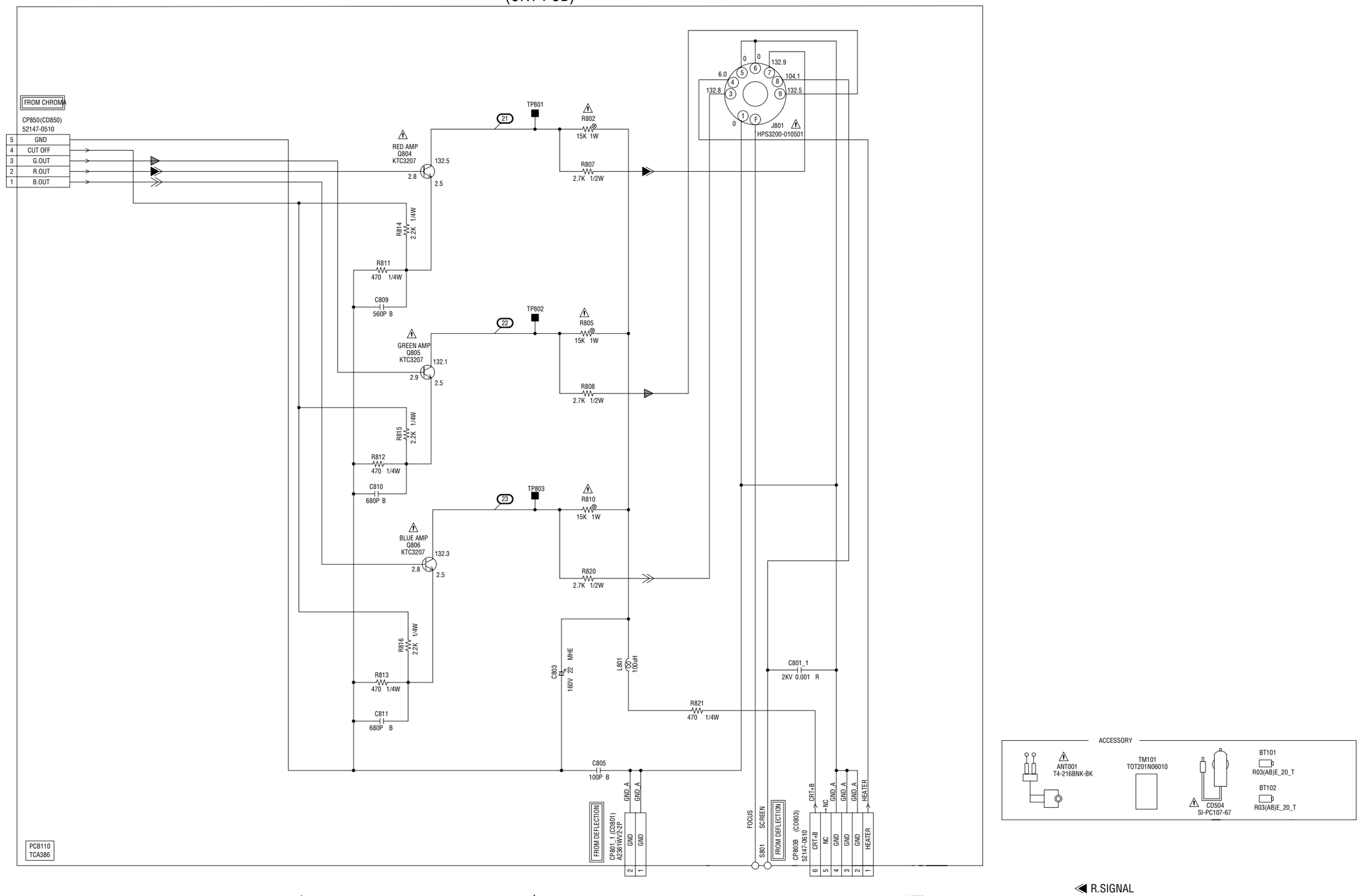
CAUTION: DIGITAL TRANSISTOR



DEFLECTION SIGNAL

CRT SCHEMATIC DIAGRAM

(CRT PCB)



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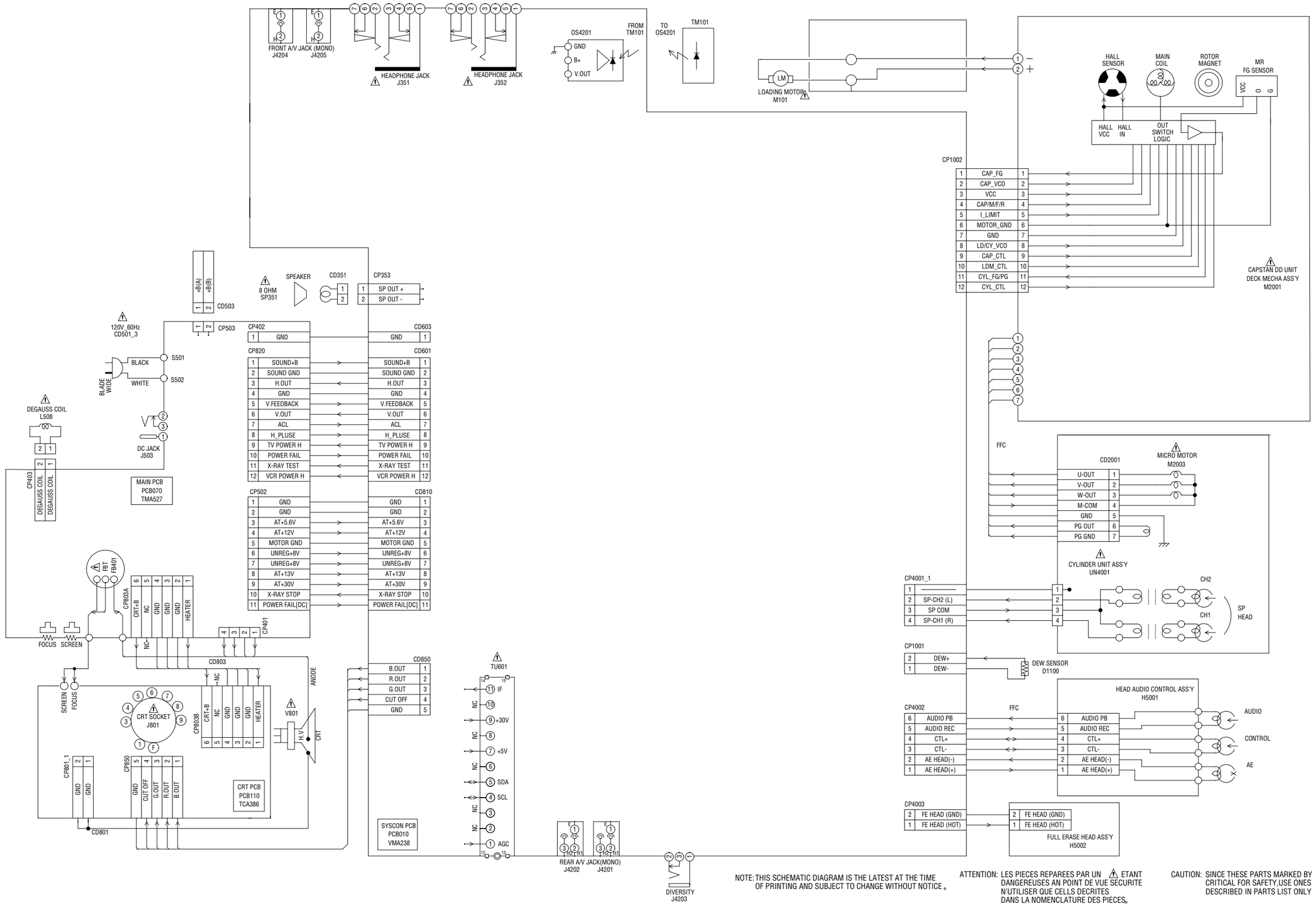
INTERCONNECTION DIAGRAM



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TOSHIBA VIDEO PRODUCTS PTE. LTD.

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